

SMALL ESTABLISHMENTS SERVICE

BANKING INDUSTRY

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AN INDUSTRY SECTOR REPORT
SMALL ESTABLISHMENT SERVICE

BANKING

DECEMBER 1978

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BANKING INDUSTRY/SMALL ESTABLISHMENTS

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BANKING INDUSTRY/SMALL ESTABLISHMENTS

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I INTRODUCTION

I INTRODUCTION

- This report is produced by INPUT as part of the Small Establishment Service (SES). The report covers the selection and use of information processing products, services, and supplies by small establishments in the banking industry. These products and services include:
 - Computer equipment.
 - Computer services.
 - Office equipment.
 - Communications equipment.
 - Communications services.
 - Supplies.
- Both independent banking establishments and branches of the Fortune 50 list of commercial banking firms were analyzed and reported upon separately.
- Commercial banks (SIC 60) and savings and loan associations (SIC 612) were interviewed exclusively for this study.

- Establishments were analyzed and reported upon by size categories of from 1 to 19, 20 to 99, and 100 to 499 employees. These size categories match federal statistics. These employee categories correspond to asset size of \$1-12 million, \$12-75 million, and \$75-400 million per establishment.
- This report emphasizes the present use of information processing products and services and the desire for increased automation by banks.
- The banking sector is of major importance because of its existing high levels of automation and expressed needs to improve further its information processing capabilities.
- A bibliography of information sources is included in Appendix A.
- Research carried out for this report included a series of interviews carried out in July and August 1978 as specified in Appendix B.
 - Definitions of terminology used in the interviews and this report appear in Appendix C.
 - A sample copy of the questionnaire is included in Appendix D.
- Inquiries and comments on the information presented in this report are invited from clients.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. SCOPE AND KEY CONCLUSIONS

- There are a total of 50,000 savings and loan and commercial banking establishments with less than 500 employees in the United States in the banking sector. This is 98.6% of all banking establishments. In 1977 these banks held assets of \$1.3 trillion and employed over one million people.
- A total of \$1.8 billion was spent in 1977 on information processing equipment and services (not including the EDP and office staff) by these small banking establishments. This is about 6% of all expenditures by small establishments of all industry sectors for this equipment and services.
- The small banking establishment is willing and able to spend money for computer equipment and services and for word processing equipment. This is demonstrated in Exhibit II-1 which shows the average amount per employee that small banking establishments spend for information processing equipment and services.
 - The rate of \$1,734 per employee is the highest of any industry sector and illustrates the 91% penetration of computer equipment and services and 15% penetration of word processing equipment in small establishments of the banking industry.

EXHIBIT II-1

AVERAGE CURRENT EXPENDITURES OF THE BANKING INDUSTRY

EXPENDITURE CLASS	\$/EMPLOYEE	% OF ASSETS
EDP EQUIPMENT, SERVICES & SUPPLIES	\$ 414	0.033%
OFFICE EQUIPMENT	363	0.029
COMMUNICATIONS EQUIPMENT & SERVICES	957	0.075

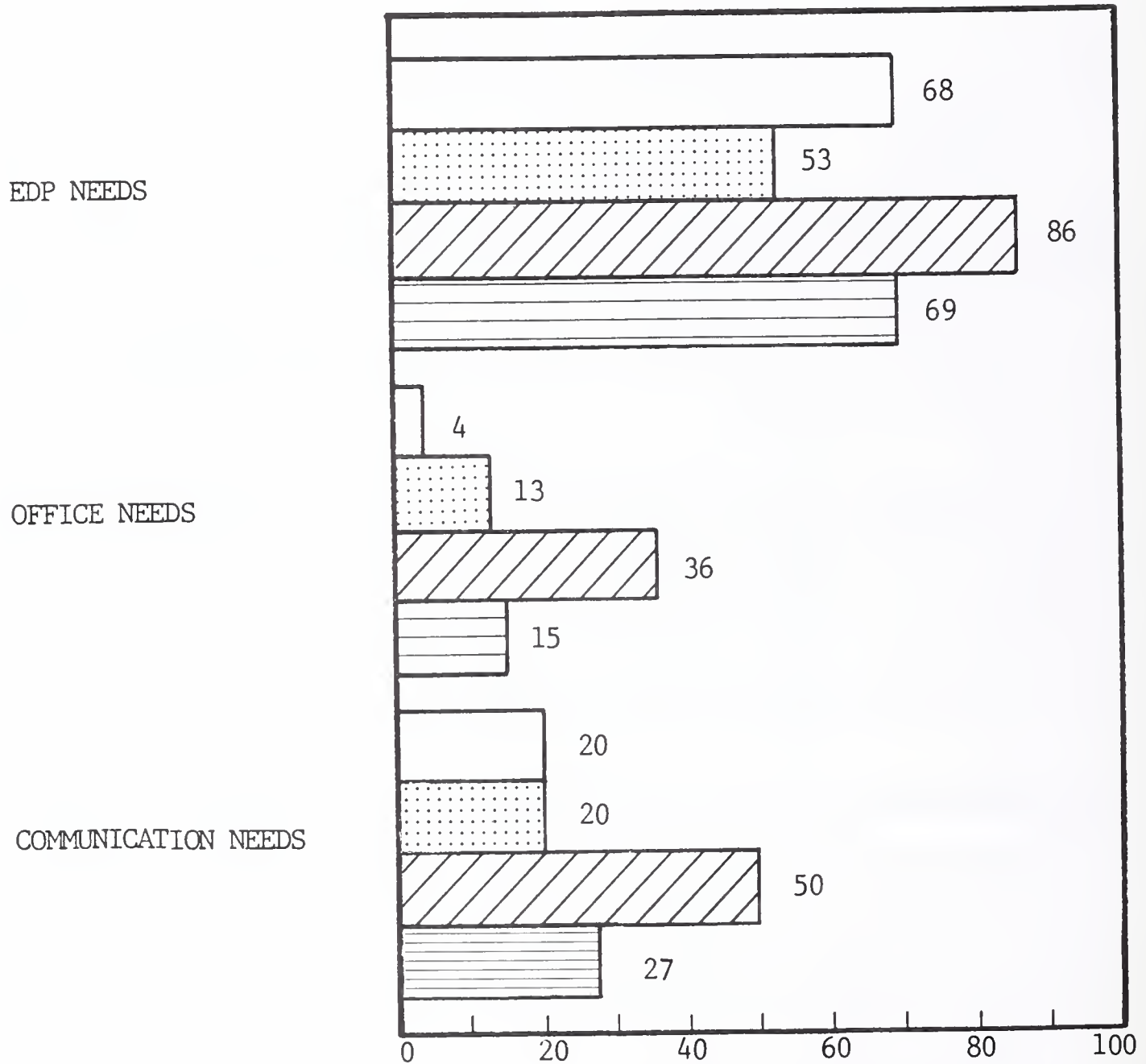
* NOT INCLUDING PERSONNEL COSTS

- Similarly, the component expenditure of \$957 per employee for communications equipment and services is almost twice as much annually as the next highest industry.
- Although purchasing is centralized for most branches of Fortune 50 banks, these branches have a considerable voice in identifying needs and recommending equipment and services, including EDP equipment and services, office equipment, and communications equipment and services. Ninety-three percent of all branch establishment respondents had a significant role in decisions to obtain equipment and services of all kinds.
- More than two-thirds of the respondents stated that they have specific immediate information processing automation needs in the areas of EDP:
 - One-sixth to one-fourth said they also have office automation, or communications needs.
- Exhibit II-2 shows that the larger establishments, which are generally also the more automated, expressed more needs than the smaller establishments; however, all sizes of small establishments have at least some needs.
 - Independents expressed almost twice as many office and communications needs as branches did (see Exhibit II-3).
- The level of need for computer and communications equipment and services ranks above average among all industry sectors. The level of need for office equipment ranks on the low side of average, probably due to the heavy emphasis in the banking industry to move totally on-line in the near future, which takes precedence over other needs.

EXHIBIT II-2

EDP, OFFICE, AND COMMUNICATION NEEDS (BY SIZE OF ESTABLISHMENT)

TYPE OF NEED EXPRESSED

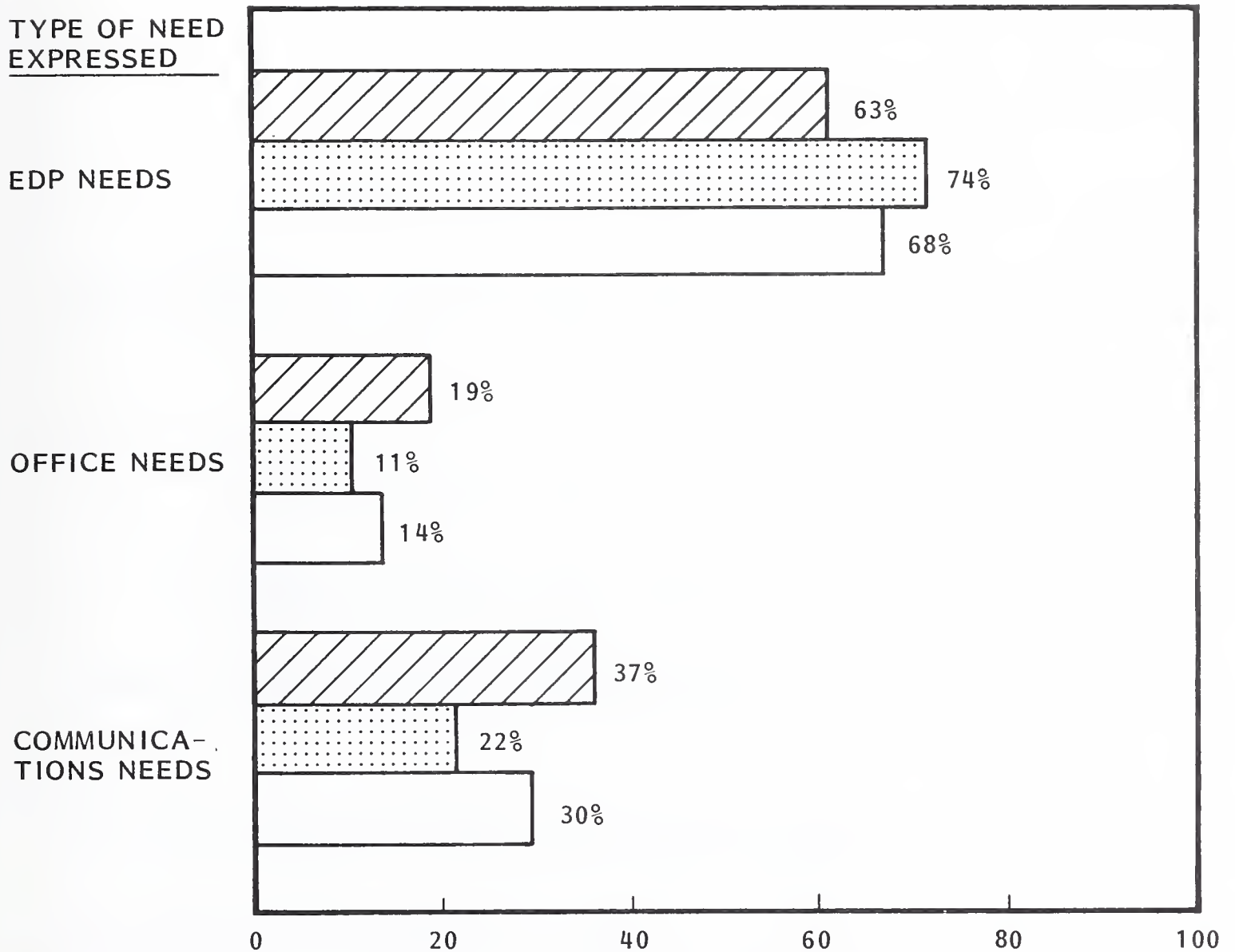


PERCENTAGE OF RESPONDENTS

- ☐ 1 - 19 EMPLOYEES = 25 RESPONDENTS
- ☒ 20 - 99 EMPLOYEES = 15 RESPONDENTS
- ☒ 100 + EMPLOYEES = 14 RESPONDENTS
- ☒ COMBINED = 54 RESPONDENTS

EXHIBIT II-3

EDP, OFFICE AND COMMUNICATION NEEDS AS REPORTED BY RESPONDENTS (BY BRANCHES/INDEPENDENTS)



INDEPENDENTS (N = 27)



BRANCHES (N = 27)



COMBINED (N = 54)

B. BANKING INDUSTRY SECTOR STRUCTURE

- Of the 50,600 banking establishments in the United States in 1975-1976:
 - 36,800 of them had 1-19 employees. (73%)
 - 12,200 of them had 20-99 employees. (24%)
 - 1,400 of them had 100-499 employees. (less than 3%)
 - 200 of them had over 500 employees. (less than 1%)
- Small establishments in the banking industry employ 2% of the United States work force, or 1.3 million people. Of these,
 - 300 thousand were in establishments of 1-19 employees.
 - 450 thousand were in establishments of 20-99 employees.
 - 250 thousand were in establishments of 100-499 employees.
- The total banking sector is growing slightly faster than the general economy, or at least by 12% per year.
 - Net income (profit) per employee exceeded \$6,800 for the top 50 banks in 1977.
 - Assets per employee for this group exceeded \$1.3 million on the average.
- Banking establishments are proportionately more numerous in California, New York, and the Midwest.

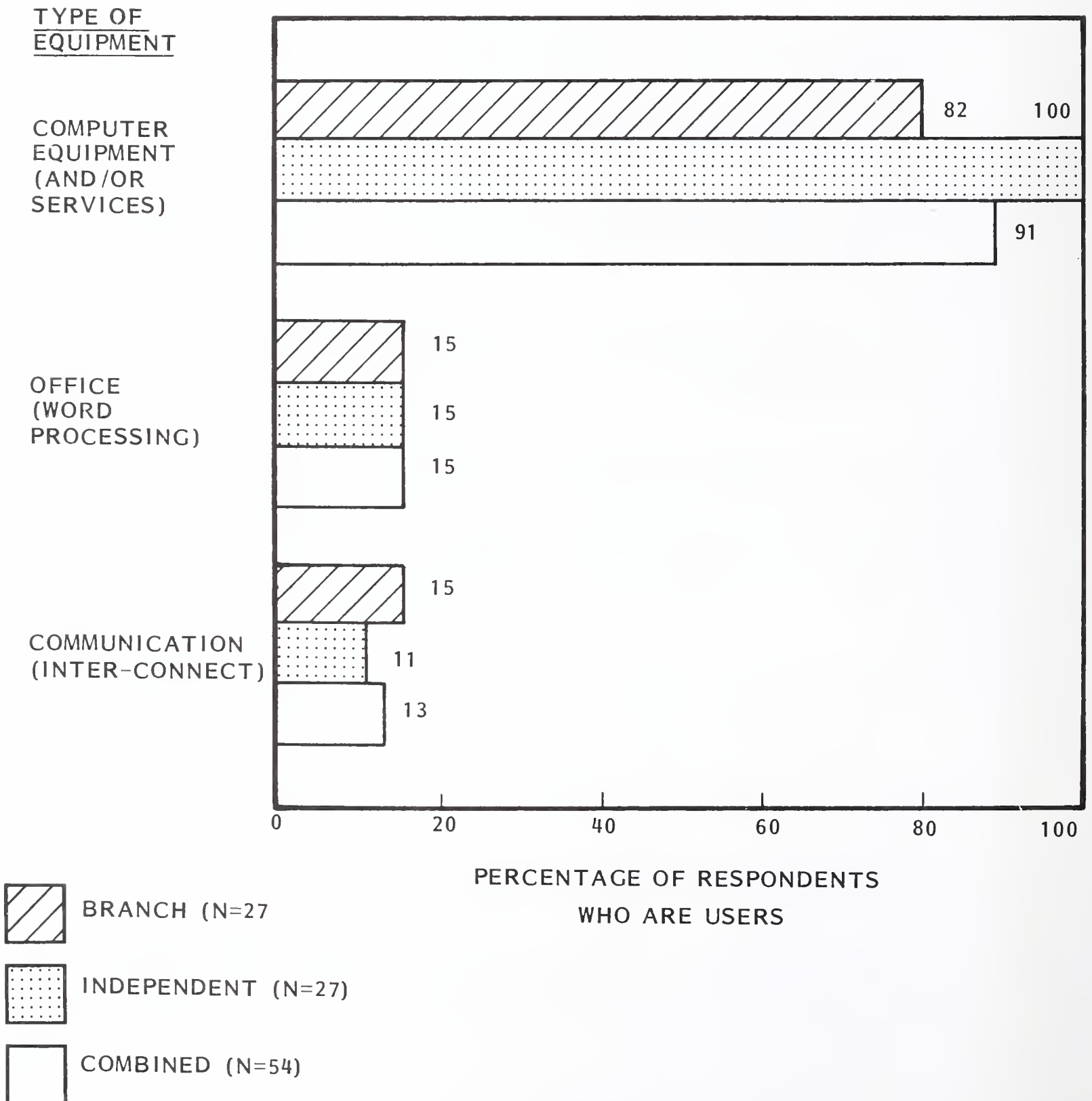
- Commercial banks outnumber savings and loan institutions 3:1, but their information processing requirements and other characteristics are similar and therefore analyzed together.

C. EQUIPMENT AND SERVICES MARKETS

- The growth in the use of computer equipment and services and office automation equipment in the banking sector is driven by:
 - The reduction in size and cost of equipment.
 - The improvement in the price/performance ratio of information processing equipment.
 - The strongly competitive, interrelated operating characteristics of the banking industry.
- These factors combine to drive the introduction of information processing equipment into increasing numbers of small firms in the sector. The resulting growth for the next five years will be 26% per year for computer equipment, 26% a year for computer services, and 20% a year for office automation equipment.
- Communications services will grow in branches of national firms at the same rate as the overall use of communications, 7% a year for voice, 20% a year for data communications and 9% overall.
 - Communications equipment such as PABX and facsimile will grow by the same percentage as office automation equipment.
- The present penetration of information processing equipment and services is shown in Exhibit II-4 for branches and independents. The penetration of

EXHIBIT II-4

USERS OF COMPUTER, OFFICE AND COMMUNICATION AUTOMATION AS REPORTED BY RESPONDENTS (TOTALS)



computer services is shown in Exhibits II-5 and II-6. Branches and independents are about equally penetrated for office and communications equipment, but independents use a greater proportion of computer equipment and services combined than branches do. Independents are also heavier users of computer services alone than branches are.

- There was no reported use of outside computer services by branches over 100 employees. In fact, many of the headquarters offices of these banks are the providers (vendors) of computer services to other banks.
- The total market for information processing equipment and supplies in the United States in 1977 for small establishments in the banking sector was:
 - Computer equipment
(not including personnel) \$ 238.3 million
 - Computer services \$ 193.2 million
 - Office equipment \$ 378.3 million
 - Communications services and equipment \$ 997.8 million
 - Total \$1,807.6 million
- This total averages about \$1,734 per employee.

D. APPLICATION NEEDS

- Computer equipment and services are used for financial and administrative applications in 100% of the branches of Fortune 50 banks and 93% of the independent banking establishments. Industry specialty applications (demand deposit accounting, loan accounting, etc.) reverses the ratio: 93% of the branches and 100% of the independents have automated at least one (and usually all) of the applications in this category.

EXHIBIT II-5

PENETRATION OF COMPUTER SERVICES
AS REPORTED BY RESPONDENTS
(BRANCHES)

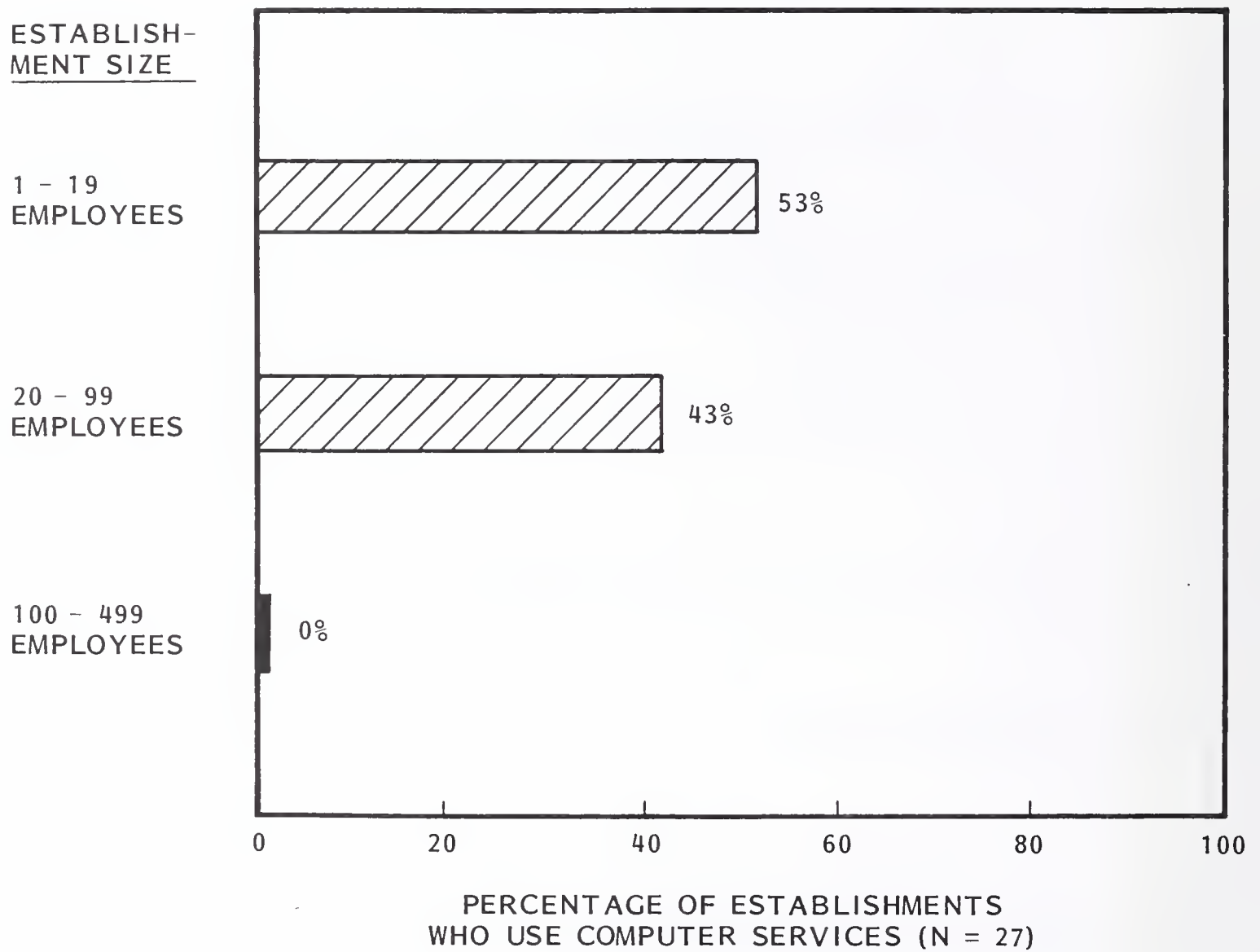
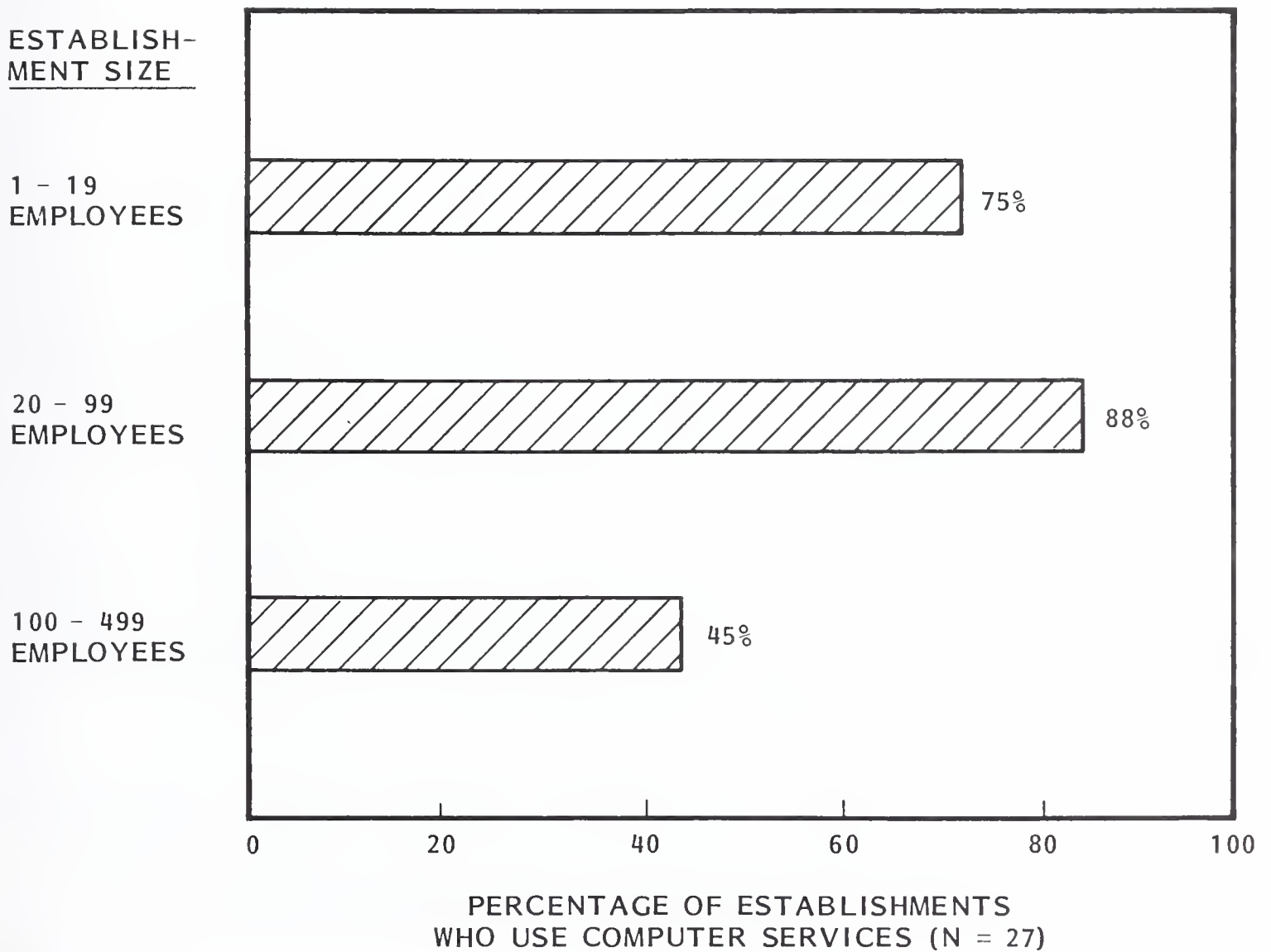


EXHIBIT II-6

PENETRATION OF COMPUTER SERVICES
AS REPORTED BY RESPONDENTS
(INDEPENDENTS)



- Essentially all of the independents who are not yet fully automated expect to automate the additional applications by 1983. Branches did not specifically express these plans but said that EDP development was decided at headquarters.
- Almost all banking establishments expect to be on-line with some or all of these applications by 1983.
- EFTS and changes in governmental reporting regulations affecting banking are the driving forces in applications development.

E. MARKETING REQUIREMENTS

- Selling to independent banking establishments always requires convincing top management to buy the equipment or service. In the case of the multi-location independents, this usually means off-site top management as well as the location manager.
- When marketing equipment or services for use by branches of Fortune 500 banks, the branch is a participant in the sales cycle 70% or more of the time, mainly in identifying and quantifying needs but also in identifying specific equipment and services and suppliers.
- Final decisions affecting branches, however, are almost always made at headquarters for computer equipment and services, and about 80% of the time for office and communications equipment and services.

F. RECOMMENDATIONS

- Vendors with products and services suitable for the small businessman should continue to direct their efforts at the banking sector.
 - The target for EDP and office automation equipment should be to upgrade or replace existing equipment.
 - Computer services vendors should concentrate on small and medium sized independent establishments.
 - Branches over 100 employees should be targeted first for communications equipment and office equipment, along with a major account marketing campaign to the bank's headquarters, followed by independents of all sizes.
 - The smallest independents (under 20 employees) are not yet ready for word processing equipment, and need further exposure to banking applications of word processing.
- Branches of Fortune 50 banks should be approached as well as independent enterprises, since they usually have a considerable say in equipment justification and selection. However, the branch location should be qualified as rapidly as possible concerning the corporate control requirements.
 - National account marketing including interaction with headquarters staff is essential in dealing with branches of Fortune 50 banks.

- Multi-function equipment is not seen as desirable by banking establishments except by loan departments to combine text and data processing or in conjunction with facsimile equipment. Vendors of multi-function equipment should approach loan department officers directly to stimulate this interest further. Other applications may also have to be specifically targeted to department managers, rather than approached through the EDP manager.
- Vendors should utilize trade journal media and association advertising to break into the market of establishments under 100 employees with multi-function and word processing equipment.
- Vendors of computer services should continue to direct their efforts at banks, and should stay abreast of developments in EFTS and governmental regulations particularly affecting branch banking, and those affecting savings and loan institutions.

III INDUSTRY STRUCTURE

III INDUSTRY STRUCTURE

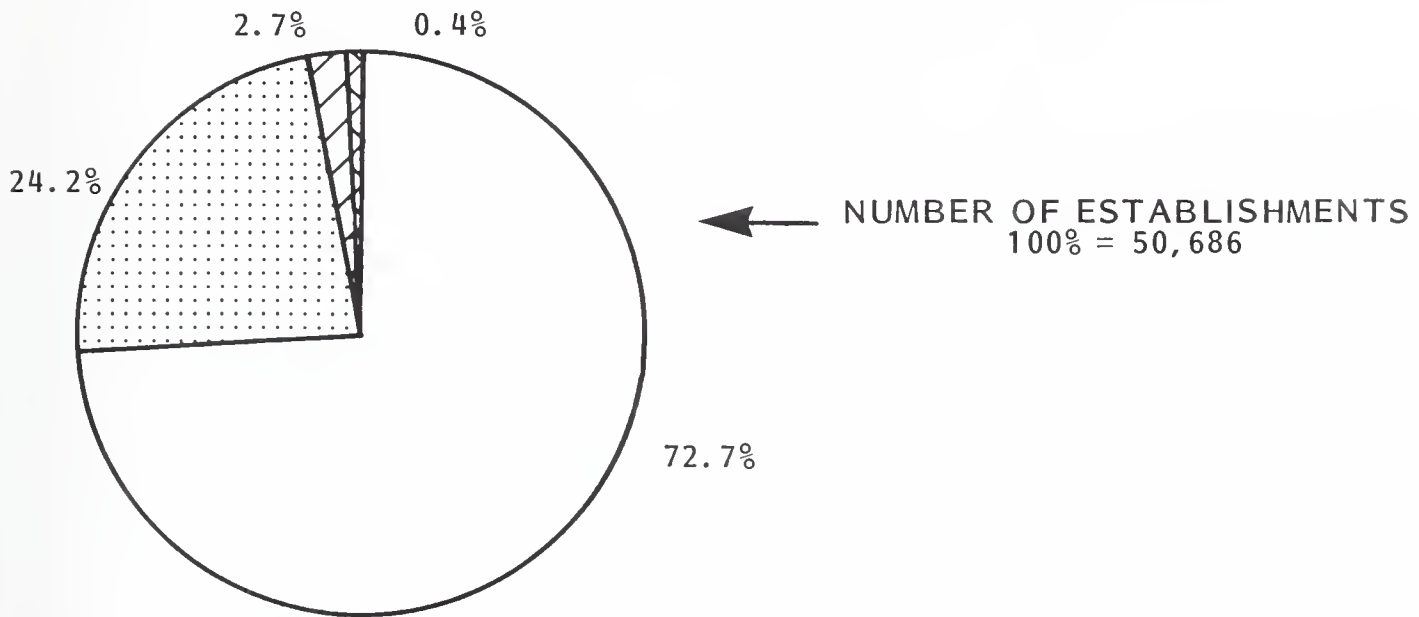
A. FUNCTIONAL DESCRIPTION

- The industry which is the focus of this study is the banking industry.
- In 1976 this industry employed 1.3 million people and accounted for assets exceeding \$1.3 trillion.
 - Two percent of the United States GNP is attributed to the banking industry, and 2.2% of the total United States work force is employed by banking establishments.
- The banking industry spends \$1.8 billion annually on information processing equipment and services including:
 - Computer equipment.
 - Computer services.
 - Office equipment.
 - Communications equipment.
 - Communications services.

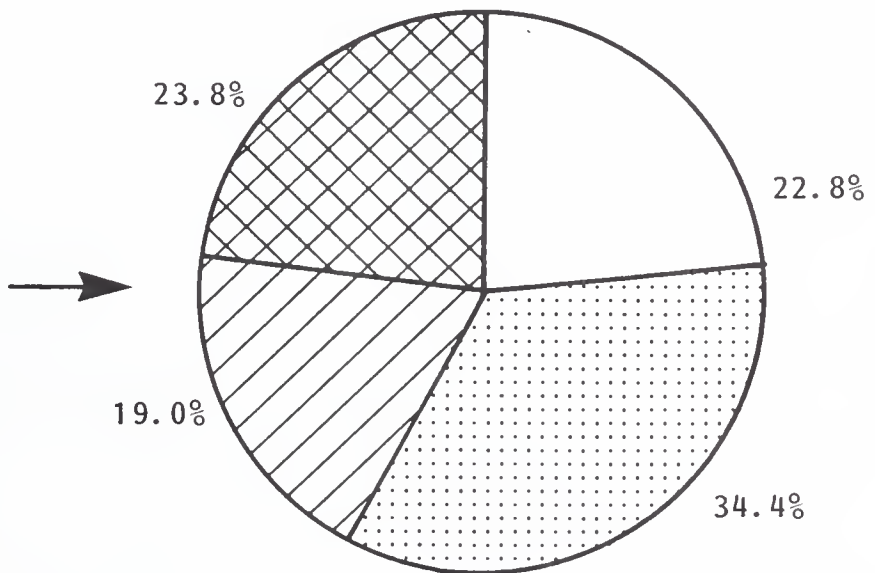
- Supplies.
- Two sub-industries are contained in banking. These are:
 - Commercial Banks (SIC 60).
 - Savings and Loan Associations (SIC 612).
- Commercial banks differ from savings and loan associations in that:
 - Commercial banks accept demand deposits, operate checking accounts, and use deposits in a highly leveraged manner to make loans and investments. Savings and loan associations are prohibited by law from performing these functions.
 - Commercial banks can extend credit through bank credit cards. Savings and loan associations cannot.
 - Savings and loan associations have a mutual type of corporate structure. Virtually all commercial banks are stock companies.
- The banking industry is comprised almost entirely of small establishments.
 - About 60% of banking establishments have less than 20 employees (see Exhibit III-1). These establishments account for approximately 25% of industry assets.
 - These very small banks employ 22.8% of all banking employees and use a substantial amount of equipment and services. Only 1.4% of banking establishments have more than 500 employees.
- Most establishments in the banking industry are classified as commercial banks (see Exhibit III-2).

EXHIBIT III-1

DISTRIBUTION OF ESTABLISHMENTS AND EMPLOYEES
IN THE BANKING INDUSTRY - SIC 60, 612
(BY SIZE OF ESTABLISHMENT, 1976)



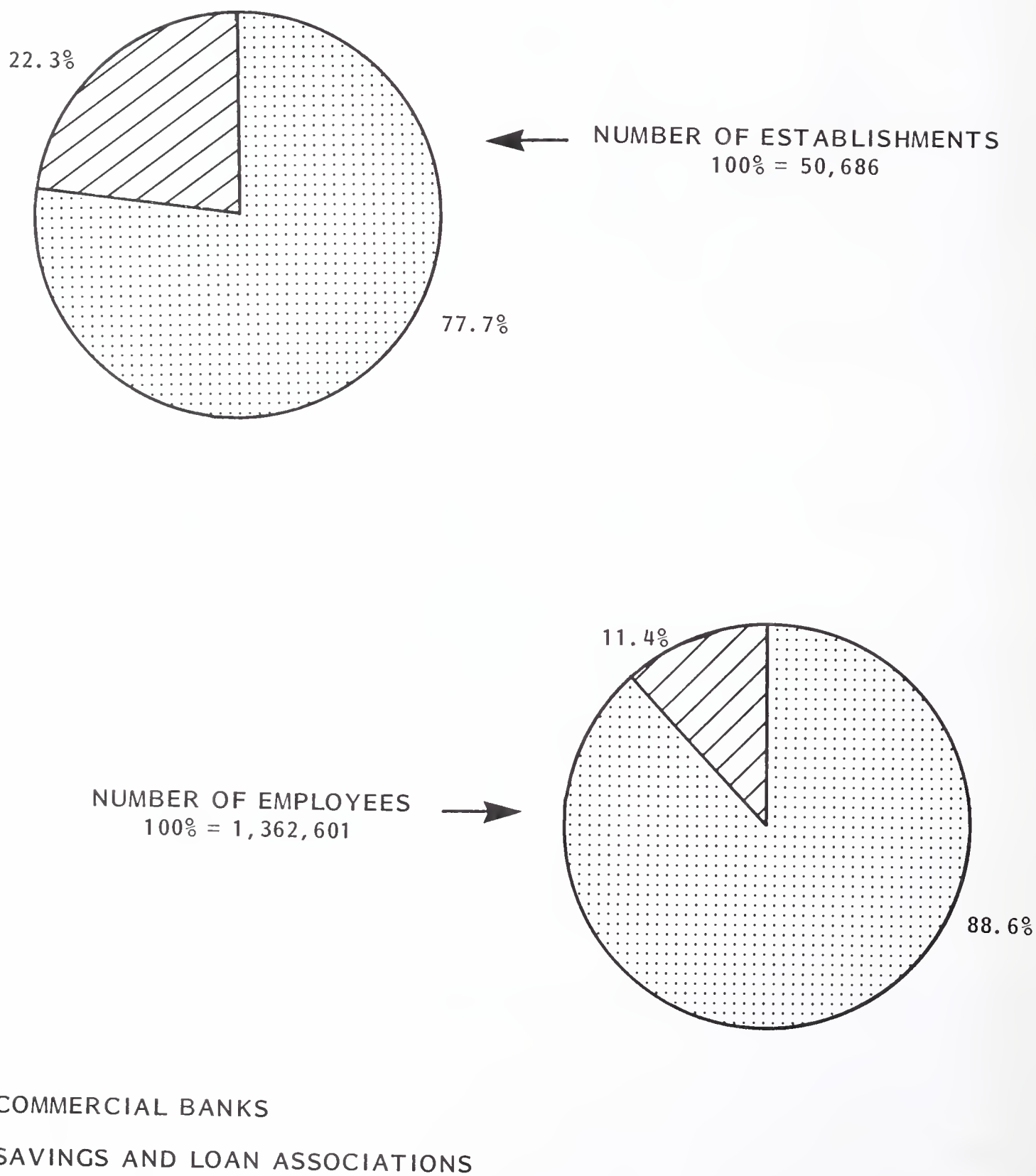
NUMBER OF EMPLOYEES
100% = 1,362,601



- ☐ 1-19 EMPLOYEES
- ☐ 20-99 EMPLOYEES
- ☐ 100-499 EMPLOYEES
- ☐ 500+ EMPLOYEES

EXHIBIT III-2

STRUCTURE OF THE BANKING INDUSTRY
(BY TYPE OF INSTITUTION)



- Over 77% of establishments in the banking industry are commercial banks.
- Almost 90% of employees in the banking industry work for commercial banks.
- The fifty largest commercial banks (measured by assets) comprise the Fortune 50 list. These banking institutions have over 2,500 branches which have been analyzed separately from other establishments in this report.
 - By definition, no savings and loan institutions are included in the Fortune 50 list, but INPUT has found that, organizationally, branches of large savings and loan institutions obtain information processing equipment similarly to branches of commercial banks.
- Since banks are usually located near financial communities there are regional industry concentrations (see Exhibit III-3).
 - Almost 20% of small commercial banking establishments are located in the states of New York, New Jersey, and Pennsylvania.
 - California alone has almost 10% of all commercial banking establishments under 500 employees.

B. INDUSTRY GROWTH HISTORY AND FORECAST

- In 1976, assets held by the banking industry were distributed fairly evenly among the four sizes of establishments shown in Exhibit III-4.
 - The largest percentage (31%) was held by the 100-499 employee size group.

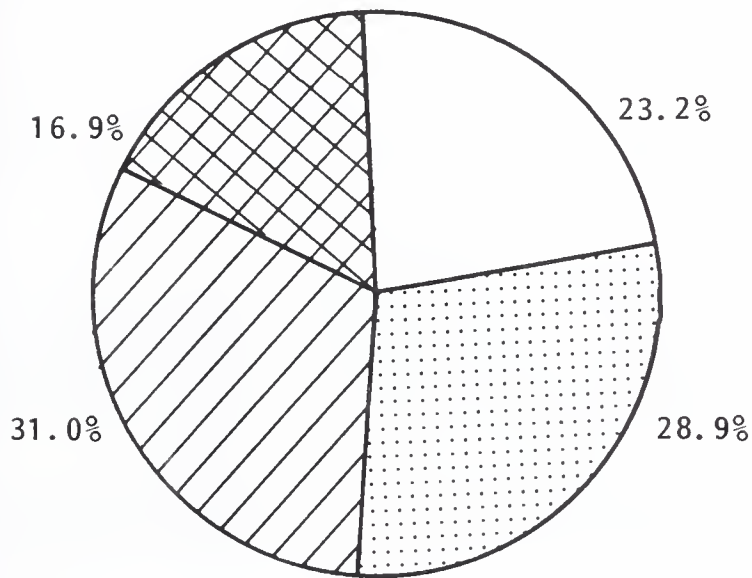
EXHIBIT III-3

DISTRIBUTION OF COMMERCIAL BANKING
ESTABLISHMENTS
(BY STATE)





STATE	NUMBER OF COMMERCIAL BANKS WITH LESS THAN 500 EMPLOYEES	% OF U.S. TOTAL	STATE	NUMBER OF COMMERCIAL BANKING WITH LESS THAN 500 EMPLOYEES	% OF U.S. TOTAL
AL	540	1.4%	MT	158	0.4%
AK	94	0.2	NE	476	1.2
AZ	378	1.0	NV	120	0.3
AR	298	0.8	NH	167	0.4
CA	3820	9.7	NJ	1391	3.5
CO	339	0.9	NM	175	0.5
CT	762	1.9	NY	3805	9.7
DE	168	0.4	NC	1087	2.8
DC	154	0.4	ND	190	0.5
FL	799	2.0	OH	1942	5.0
GA	869	2.2	OK	477	1.2
HI	154	0.4	OR	351	0.9
ID	149	0.4	PA	2489	6.4
IL	1882	4.8	RI	192	0.5
IN	1042	2.7	SC	482	1.2
IA	740	1.9	SD	238	0.6
KS	645	1.6	TN	817	2.1
KY	604	1.5	TX	1445	3.7
LA	595	1.5	UT	201	0.5
ME	323	0.8	VT	114	0.3
MD	822	2.1	VA	1066	2.7
MA	1322	3.4	WA	841	2.1
MI	1455	3.7	WV	217	0.6
MN	767	2.0	WI	702	1.8
MS	464	1.2	WY	86	0.2
MO	772	2.0			
TOTAL NUMBER OF COMMERCIAL BANKS WITH LESS THAN 500 EMPLOYEES				39,186	100.0%

EXHIBIT III-4

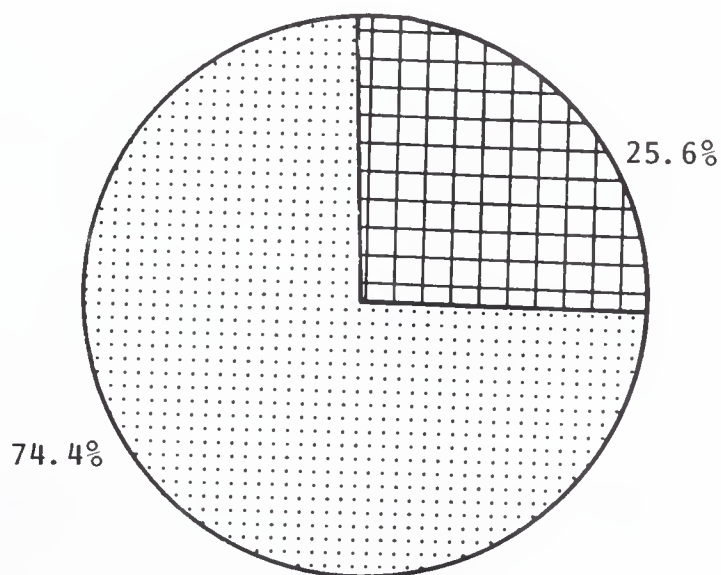
DISTRIBUTION OF ASSETS IN THE
BANKING INDUSTRY (BY SIZE OF ESTABLISHMENT
AND BY TYPE OF INSTITUTION)





ASSETS HELD BY SIZE
OF ESTABLISHMENT
100% = \$1,324 BILLION

-  1-19 EMPLOYEES
-  20-99 EMPLOYEES
-  100-499 EMPLOYEES
-  500+ EMPLOYEES

ASSETS HELD BY TYPE
OF INSTITUTION
100% = \$1,324 BILLION



-  COMMERCIAL BANKS
-  SAVINGS AND LOAN ASSOCIATIONS

- However, almost three-quarters of the assets were held by commercial banks.
 - This relationship is closer to the ratio of establishments than it is to the ratio of employees.
- The banking industry has experienced significant historical growth both in assets and employment.
 - From 1965 to 1975, total industry employment increased at an AAGR of 4.7%.
- As shown in Exhibit III-5, since 1960 both commercial banks and savings and loan institutions have experienced a steady increase in assets, although the rate of growth has fluctuated.
 - Assets held by commercial banks have more than tripled in face value.
 - Assets held by savings and loan institutions have increased by a factor of 4.7 times.
- Combined, this growth represents an AAGR of more than 9.5% (see Exhibit III-6).
- However, the rate of growth has not been uniform from period to period, nor has it been identical for commercial banks and for savings and loans (see Exhibit III-7).
 - Commercial banks have shown a monotonically increasing rate, from 7.9% for the period 1960-1965, to 10.7% for the period 1970-1975.
 - S&L institutions grew faster than commercial banks in the period 1960-1965, then fell far behind from 1965 to 1970.

EXHIBIT III-5

DOLLAR GROWTH OF ASSETS OF COMMERCIAL BANKS
SAVINGS AND LOAN ASSOCIATIONS
(1960-1975)

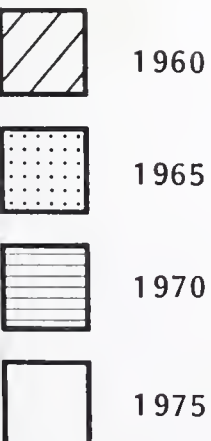
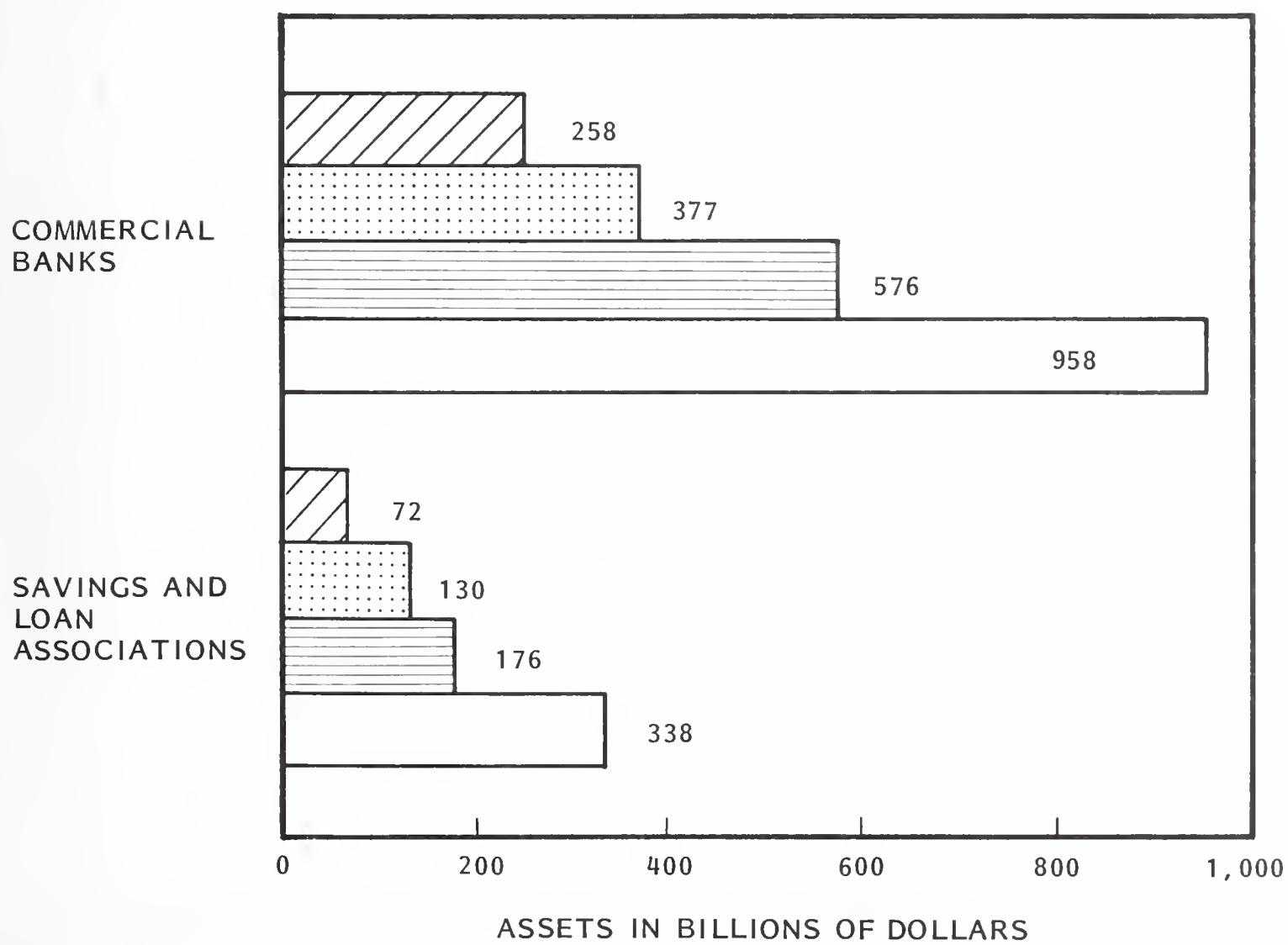


EXHIBIT III-6

RATE OF GROWTH OF ASSETS IN THE
BANKING INDUSTRY (1960-1975)

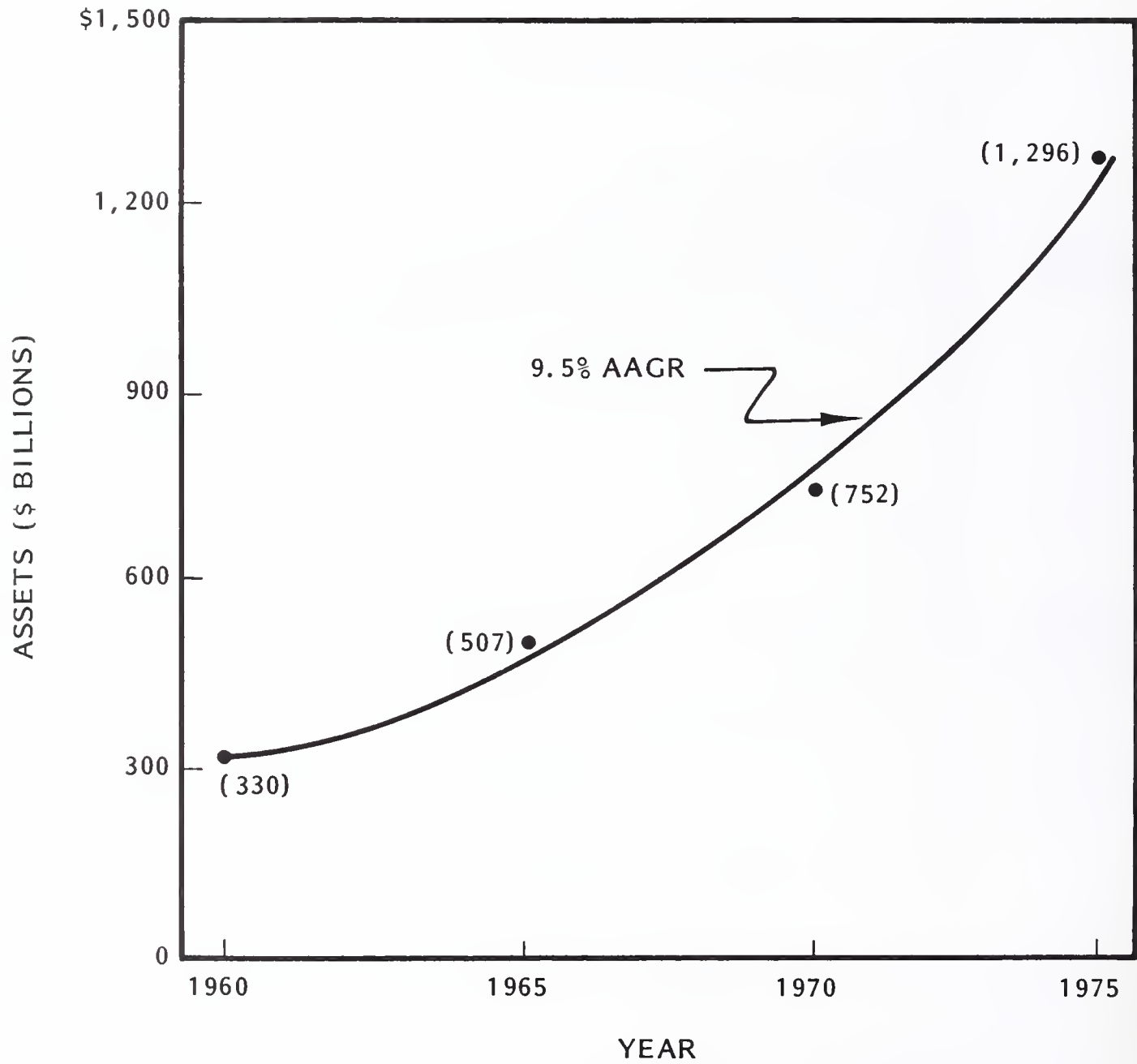
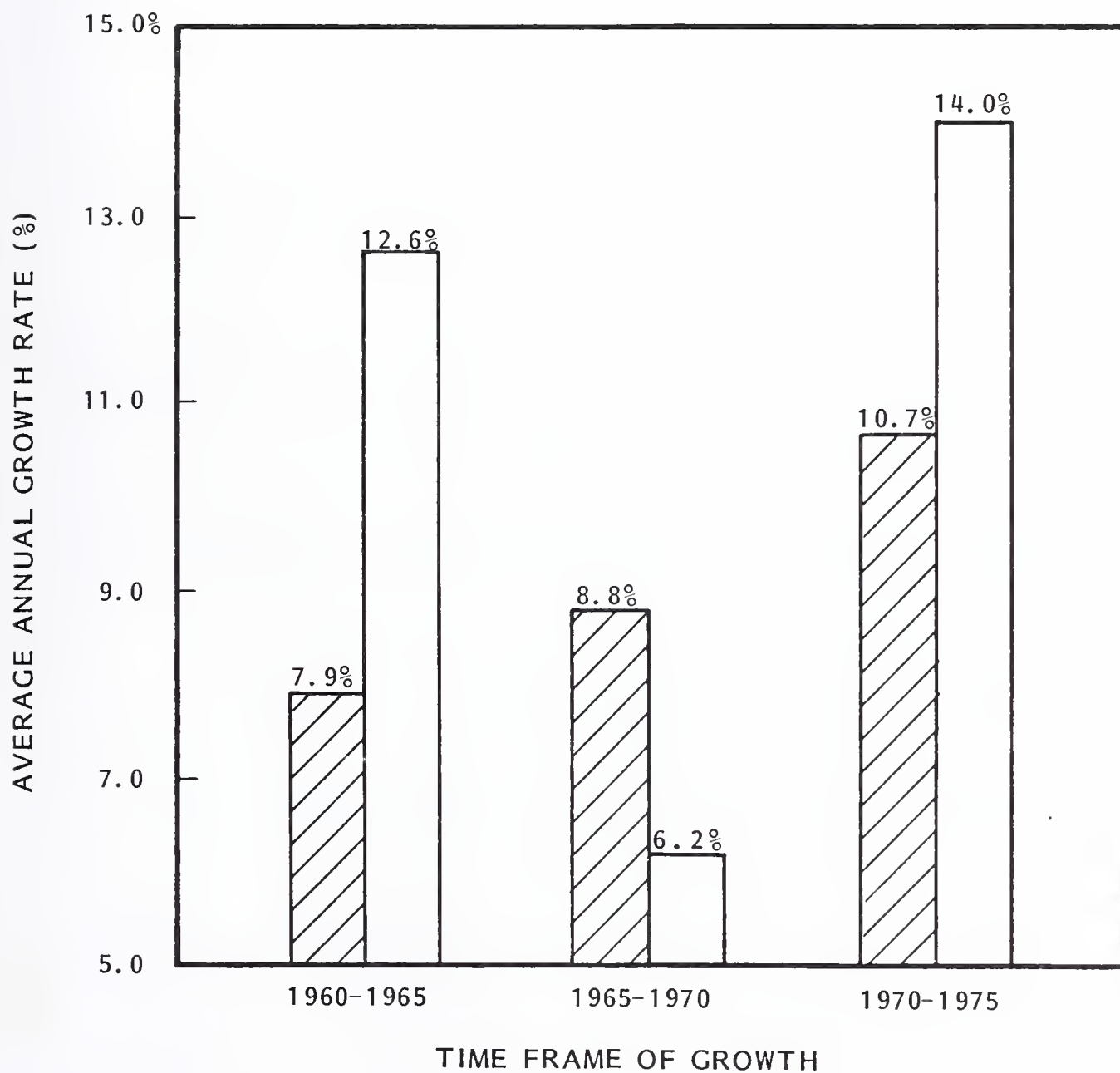


EXHIBIT III-7

AVERAGE ANNUAL GROWTH RATE OF ASSETS
FOR COMMERCIAL BANKS AND SAVINGS AND LOAN
ASSOCIATIONS (1960-1975)



COMMERCIAL BANKS (SIC 60)



SAVINGS AND LOAN ASSOCIATIONS (SIC 612)

- During the most recent period for which figures are available (1970-1975), savings and loans again led commercial banks by 14.0% compared to 10.7%.
- Assuming current asset growth trends will continue, in 1983 assets in small commercial banking establishments will exceed \$1.9 trillion. This will be greater than in the entire banking industry's 1976 assets (\$1.3 trillion).
 - Assets of the entire banking industry will be \$2.6 trillion.
- Because the banking industry is highly regulated by federal and state government agencies, legislative changes may have drastic effects on relative growth rates and banking practices.
 - Potential legislative changes at the federal level are discussed in the Correspondent Banking and the Savings and Loan Industry reports, both part of INPUT's Market Analysis Service.
- Briefly, the important legislative changes that may affect the banking industry are:
 - Congressional reforms of the nation's financial institutions.
 - New rules defining liability for third party payment accounts in connection with Electronic Fund Transfer Systems (EFTS).
 - State regulations defining branching and bank holding companies, particularly the status of off-premise automatic teller machines (ATM's).

IV USE OF INFORMATION PROCESSING AND COMMUNI-
CATIONS EQUIPMENT AND SERVICES

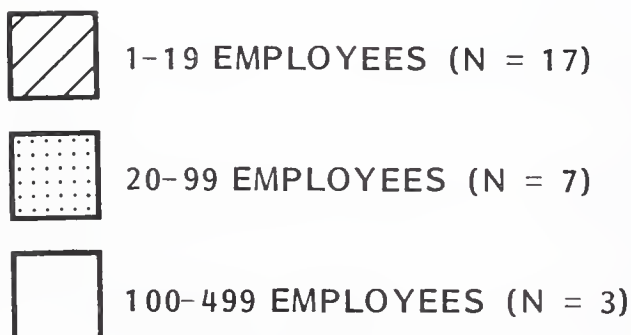
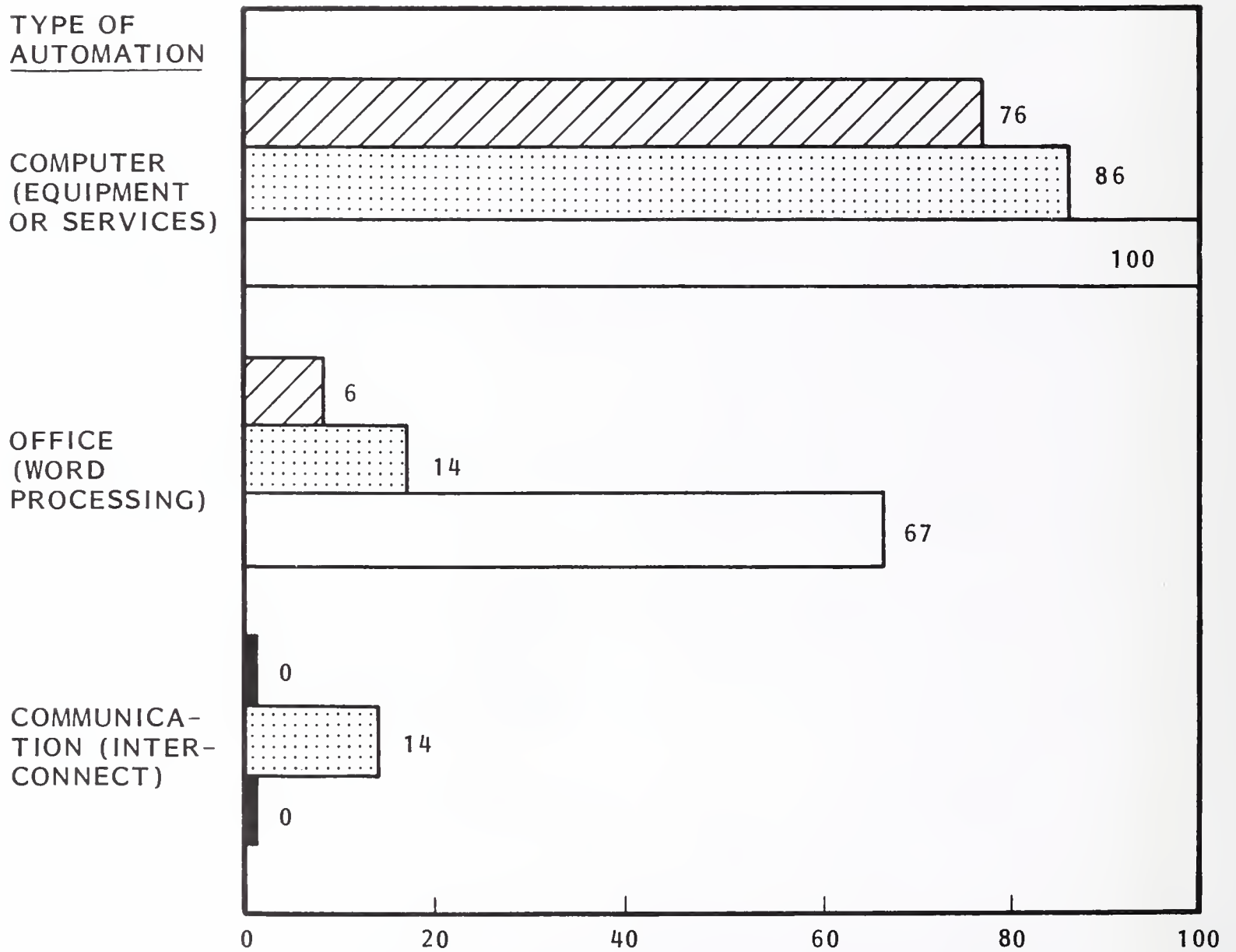
IV USE OF INFORMATION PROCESSING AND COMMUNICATIONS EQUIPMENT AND SERVICES

A. HOW AUTOMATED IS THE INDUSTRY?

- The banking industry is a very heavy user of computer automation, ranking at or very near the top of all industries in terms of percentage of establishments using computer equipment and/or services.
 - Exhibit IV-1 shows that the degree of use of computer automation ranges from 76% of the smallest branch establishments to 100% of the 100-499 employee establishments.
 - Even those branch establishments that do not have computer equipment on-site or do not directly employ outside computer services nevertheless are indirect users via another nearby branch location.
 - Within the next five years these establishments also will have some form of on-site computer automation.
- Banking is among the more advanced industries in its use of office automation (word processing); but the percentage of small establishments that use this type of equipment is much lower than the percentage using computer equipment/services.

EXHIBIT IV-1

USERS OF COMPUTER, OFFICE, AND COMMUNICATION AUTOMATION AS REPORTED BY RESPONDENTS (BRANCHES)



- Overall, 15% of branch respondents reported use of word processing, with more users among the larger establishments.
- While there is widespread use of PABX and keyset communications equipment by banks, especially branch establishments, very few respondents reported that they are using anything other than the standard equipment as supplied by the local telephone company.
- Only 14% of the medium sized branches, which represents a single respondent, reported using an interconnect PABX.
- The status of computer, office, and communications automation among independent establishments is very similar (see Exhibit IV-2).
- All respondents from independent establishments in each size category reported that they are using on-site computer equipment, computer services, or both.
- There is progressively more use of word processing equipment as the size of the establishment increases.
- No use of word processing at all was reported by the smallest size category of 1-19 employees.
- Use of interconnect communications equipment was reported by small percentages of establishments over 20 employees in size.

B. PENETRATION OF COMPUTER AUTOMATION

- The governing factor in determining whether a banking establishment uses its own computer equipment is the size of the establishment (see Exhibit IV-3).

EXHIBIT IV-2

USERS OF COMPUTER, OFFICE, AND COMMUNICATION AUTOMATION AS REPORTED BY RESPONDENTS (INDEPENDENTS)

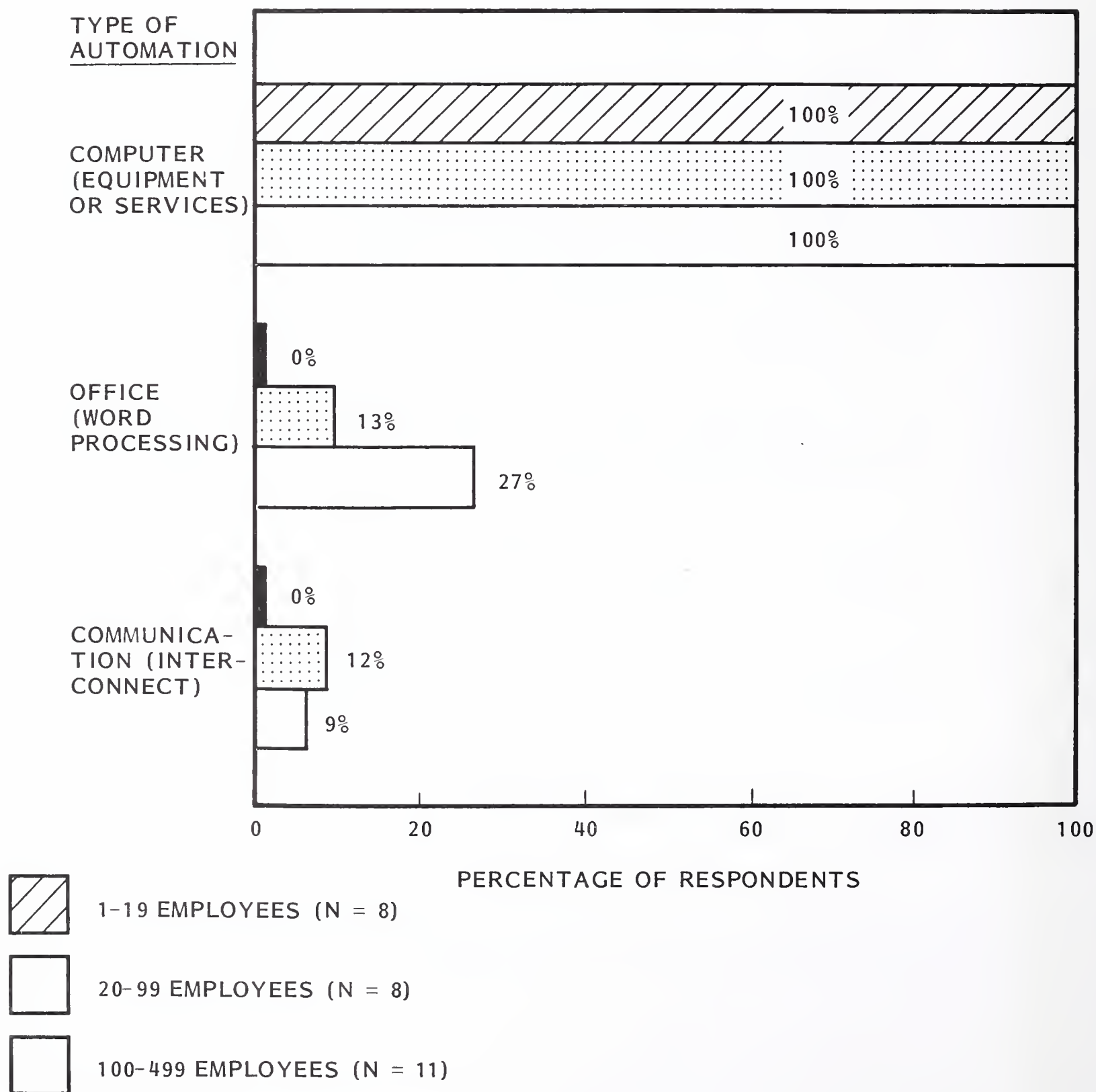
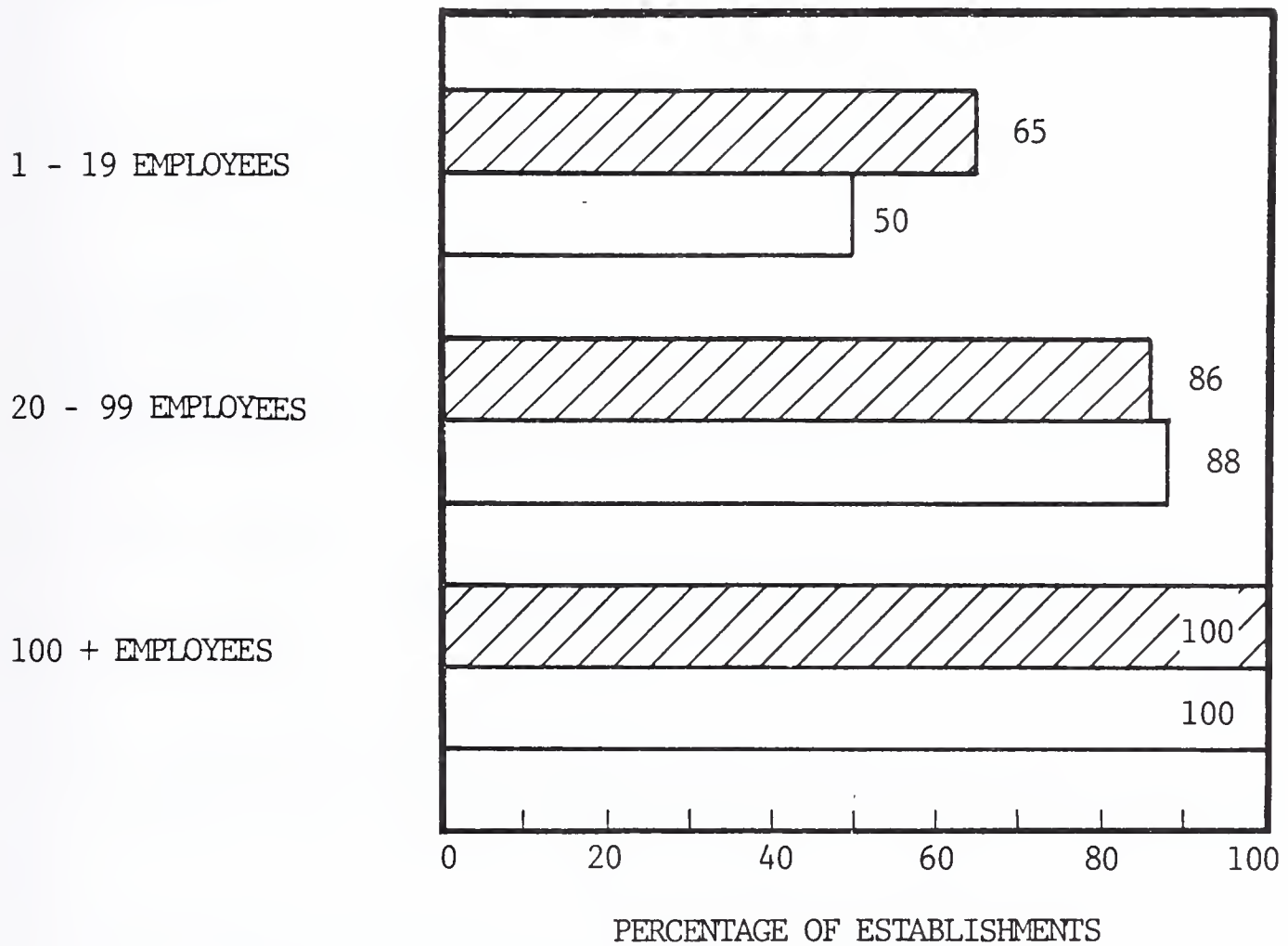


EXHIBIT IV-3

EDP EQUIPMENT INSTALLED ON-SITE
(BY TYPE OF ESTABLISHMENT)

ESTABLISHMENT SIZE



- ☒ BRANCH = 27 RESPONDENTS
☐ INDEPENDENT = 27 RESPONDENTS

- There is progressively greater use of on-site computer equipment as the size of establishment increases.
- Differences between branches and independents in the use of on-site computer equipment are inconsequential.
- Exhibit IV-4 lists the different make and models of computer equipment that were reported by respondents.
 - Note that large mainframe equipment is not usually located at establishments in the size categories covered by this report, but more likely at corporate headquarters.
 - Not mentioned by respondents was Univac equipment, estimated by INPUT to have about a 10% market share. The other vendors are estimated as: IBM-46%; NCR-25%; Burroughs-16%; Miscellaneous-3%.

C. FACTORS AFFECTING USE OF COMPUTER SERVICES

- At least 40% of all sizes of banking establishments except the largest branch category use computer services, ranging upward to 88% of the medium sized independent establishments (see Exhibit IV-5).
 - In general, independent establishments rely more heavily on the use of computer services than branch establishments do, by a ratio of 67% to 45%.
- In fact, the banking industry spends a much higher percentage of its EDP dollar on outside computer services than any other industry does.
 - The reason for this may be the difficulty of attracting competent EDP personnel to non-urban localities in states that do not permit branch

EXHIBIT IV-4

MAKES AND MODELS OF COMPUTER EQUIPMENT INSTALLED BY RESPONDENTS

- BURROUGHS L6500
- BURROUGHS L9000
- BURROUGHS B80
- BURROUGHS TT 100
- IBM 3270, 2260
- IBM SYSTEM/34
- IBM 360/40
- NCR 279
- NCR 299
- NCR 1550
- NCR 43
- NCR 43

EXHIBIT IV-5

RATIO OF USE OF COMPUTER EQUIPMENT AND/OR COMPUTER SERVICES (BRANCHES/INDEPENDENTS)

BRANCHES

1 - 19
EMPLOYEES

20 - 99
EMPLOYEES

100 - 499
EMPLOYEES

INDEPENDENTS

1 - 19
EMPLOYEES

20 - 99
EMPLOYEES

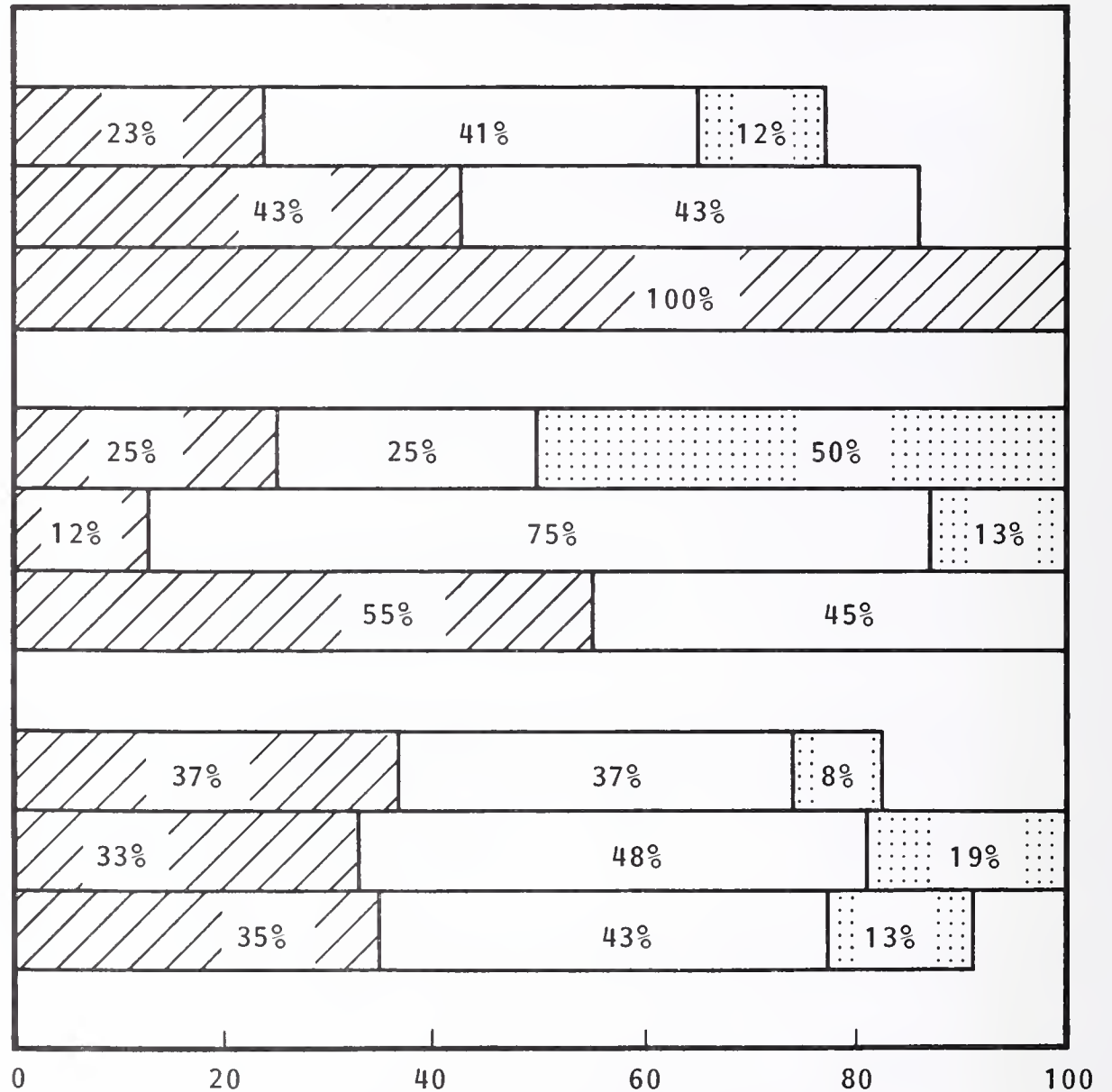
100 - 499
EMPLOYEES

TOTAL

BRANCHES

INDEPENDENTS

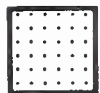
COMBINED



PERCENTAGE OF RESPONDENTS



USING COMPUTER EQUIPMENT ALONE



USING COMPUTER SERVICES ALONE



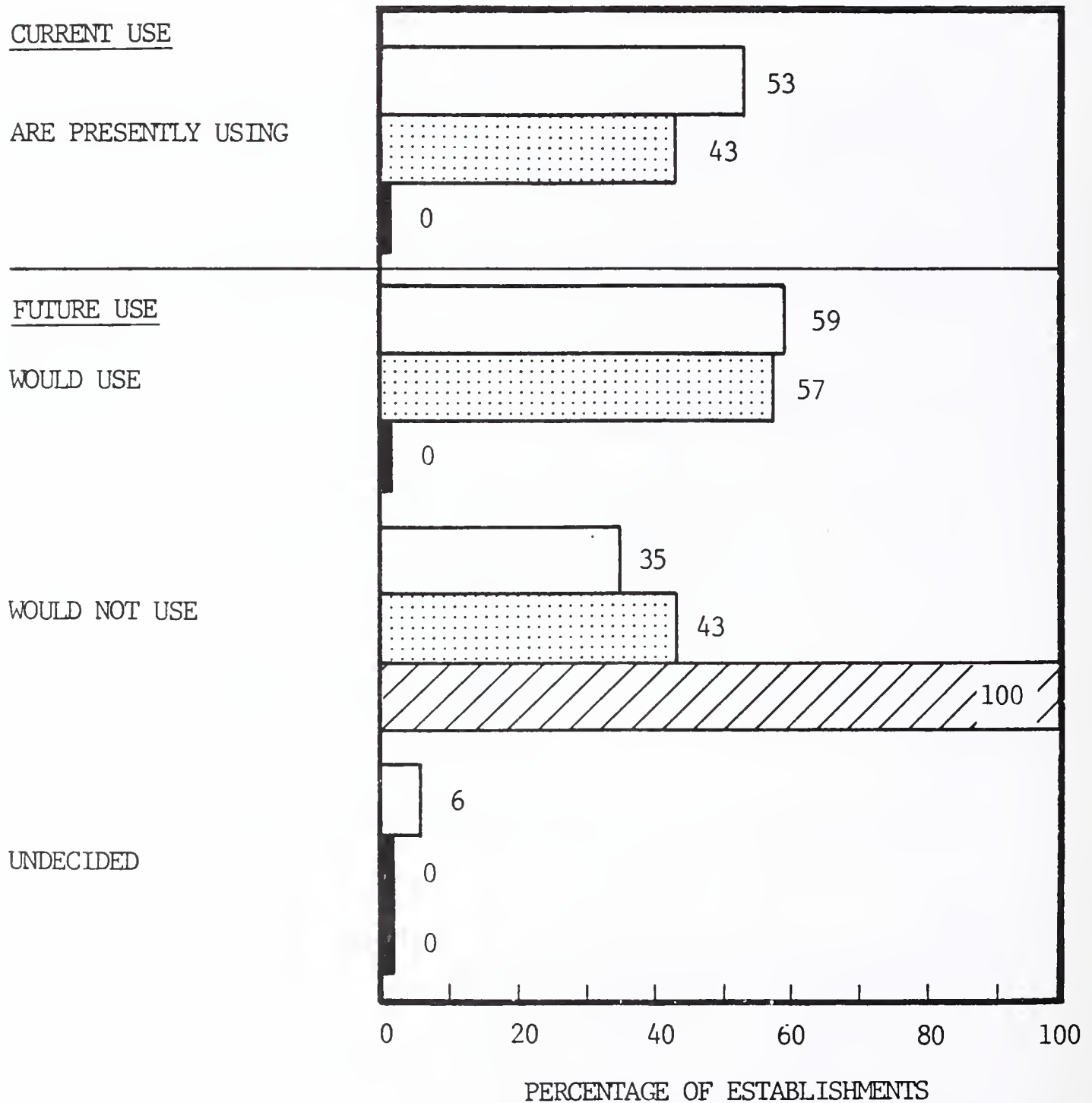
USING BOTH COMPUTER EQUIPMENT AND COMPUTER SERVICES

banking, or simply the high level of interdependence and massive volume of transactions that must be processed and coordinated between organizations.

- Larger banks and automated clearing houses generally provide about half of all computer services, with the balance split among national and local services vendors and facilities managers.
- Survey respondents were generally well pleased with the use of RCS, and at least among branch establishments, would make more use of them in the future than they do now (see Exhibit IV-6).
 - Fifty-nine percent of the 1-19 employee category said they would use computer services, compared to 53% who are now using RCS.
 - Fifty-seven percent of medium sized branches would use RCS in the future, compared to 43% who use RCS now.
 - Respondents from large branches said they do not use outside services now, nor do they expect to use them in the future, because these services are provided by corporate headquarters.
- Independents who are now using RCS expect to continue to do so in the future (see Exhibit IV-7).
 - Eighteen percent of the large independents are undecided and may consider RCS as an alternative.
- Another indication of the level of satisfaction of users with RCS is that no substantive reasons were stated for not using RCS.

EXHIBIT IV-6

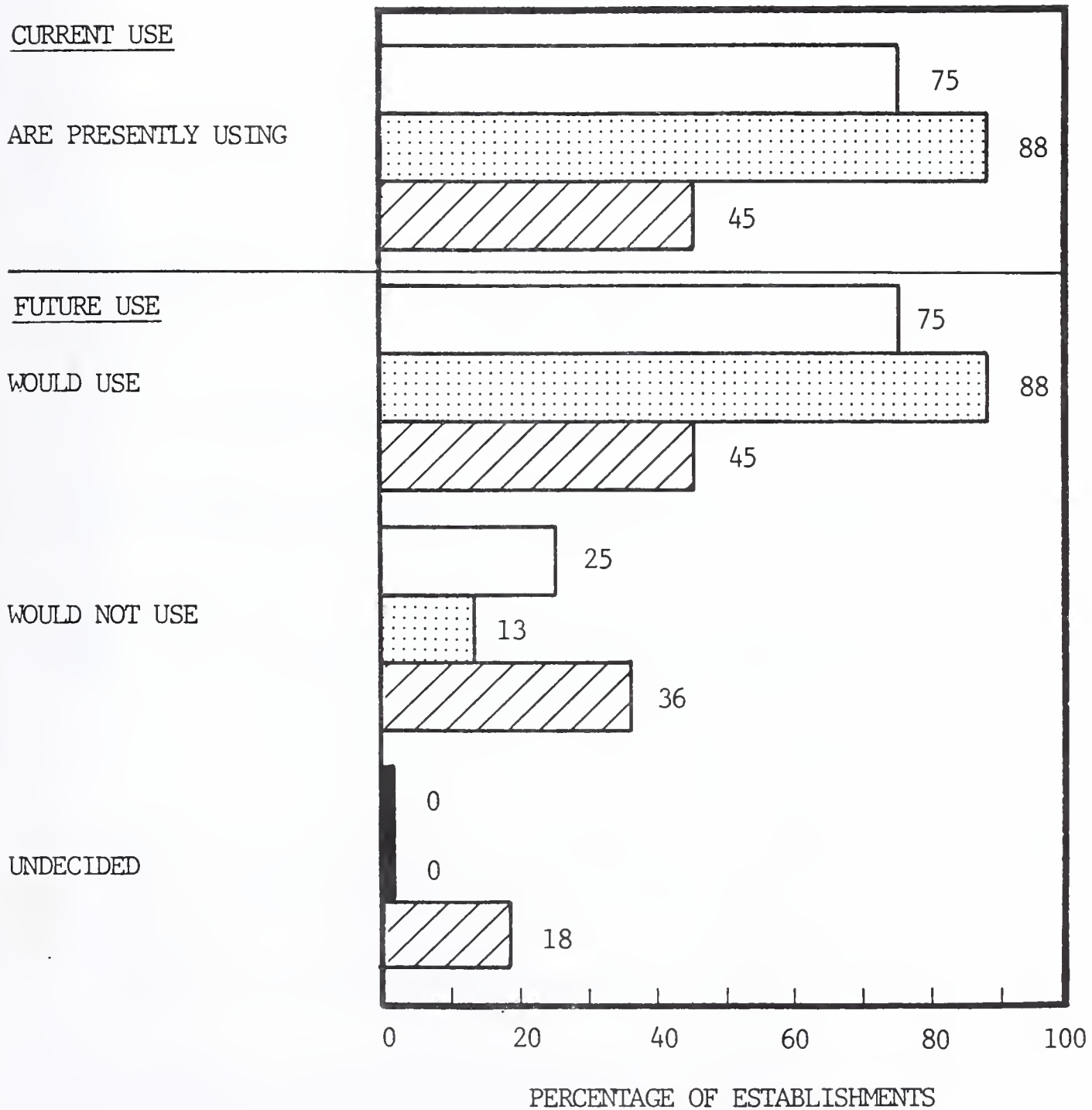
ATTITUDE TOWARD COMPUTER SERVICES - BRANCHES



- ☐ 1 - 19 EMPLOYEES = 17 RESPONDENTS
- ☒ 20 - 99 EMPLOYEES = 7 RESPONDENTS
- ☒ 100 + EMPLOYEES = 3 RESPONDENTS

EXHIBIT IV-7

ATTITUDE TOWARD COMPUTER SERVICES - INDEPENDENTS



- ☐ 1 - 19 EMPLOYEES = 8 RESPONDENTS
- ☒ 20 - 99 EMPLOYEES = 8 RESPONDENTS
- ☒ 100 + EMPLOYEES = 11 RESPONDENTS

- Examples of specific comments and/or reasons for not using computer services are shown in Exhibit IV-8 for branch respondents and in Exhibit IV-9 for independent respondents. They show that services are often provided by headquarters or on respondents' own computers.

D. PENETRATION OF OFFICE AUTOMATION

- Office automation in its broad definition can include text or word processing, photocopying, photo-typesetting, and/or facsimile transmission, as well as the use of multi-function equipment.
- In this study, the use of text or word processing equipment is considered to be the bellwether for office automation, because:
 - Virtually all establishments used photocopying equipment.
 - There was very little reported use of photo-typesetting or facsimile equipment.
- Memory typewriters and multi-function equipment used for word processing are considered word processing equipment.

I. WORD PROCESSING EQUIPMENT

- The banking industry is considered an average user of word processing compared to other industry sectors, being neither highly penetrated in any size class of establishments, but still showing some interest in and use of word processing in almost every establishment size category (see Exhibit IV-10).
- The only group of respondents who did not report any current use of word processing was the 1-19 employee group of independent establishments.

EXHIBIT IV-8

PERCEIVED BARRIERS TO USING COMPUTER SERVICES - BRANCHES

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "Headquarters mandates."
- "All work is sent to headquarters for processing."
- "Our company has adequate data processing services."
- "Corporate office does all processing."
- "Go through headquarters."
- "Headquarters has a sophisticated data processing department and serves the branches."
- "Headquarters has one of the most sophisticated data processing set-ups in the United States. We have no need for services."
- "We are hooked to headquarters for all operation."
- "We have our own in-house system."
- "We have our own computer."
- "We use our own system."

EXHIBIT IV-9

PERCEIVED BARRIERS TO USING COMPUTER SERVICES - INDEPENDENTS

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT

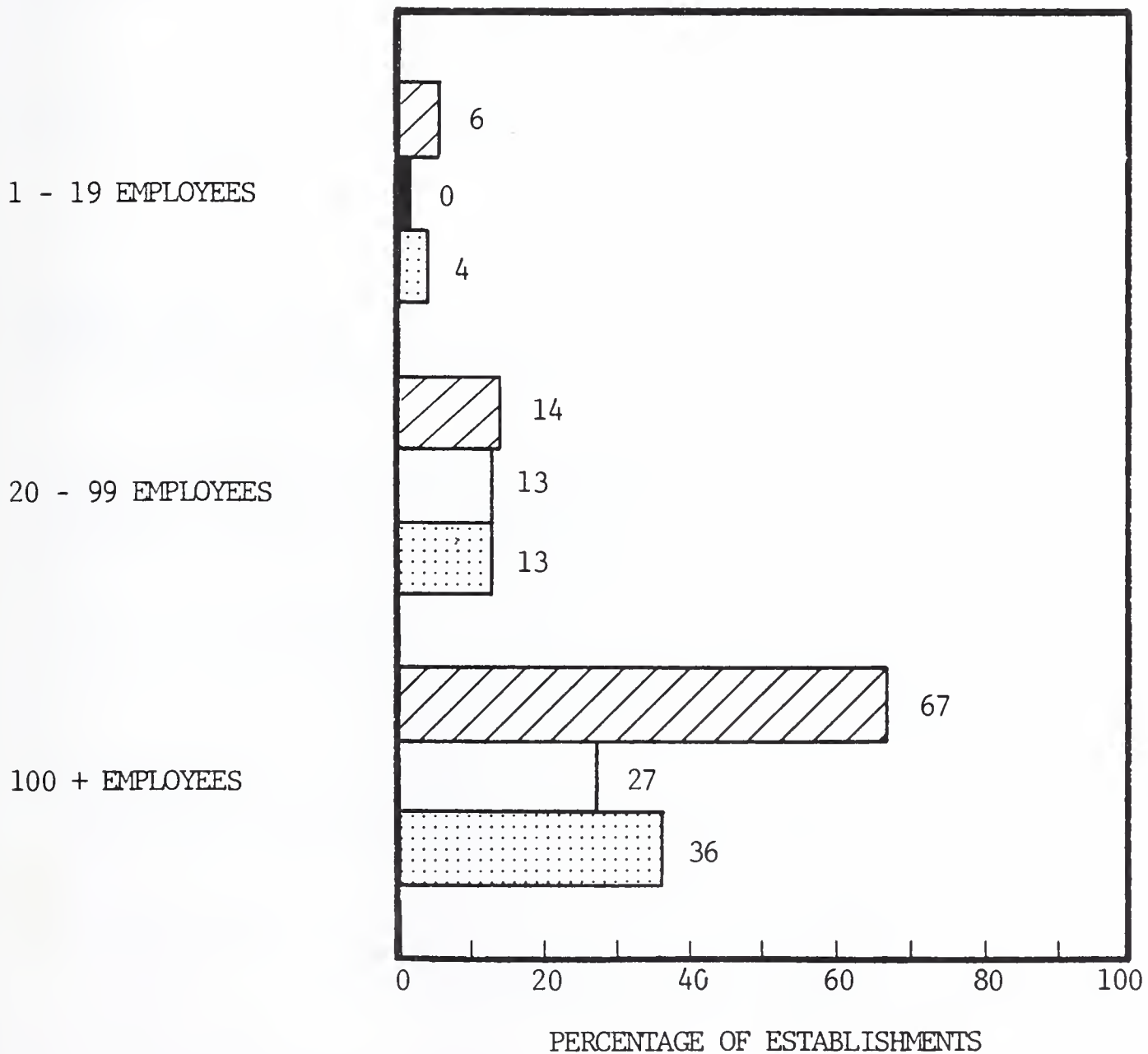





- "When we wanted to automate, we purchased a computer."
- "Easier done at location."
- "An in-house computer is used."
- "It's more efficient to use an in-house system."
- "We have our own computer and act as a business service bureau for other banks."
- "Utilizing our in-house system is our primary concern."
- "Handled in-house."

EXHIBIT IV-10

USERS OF WORD PROCESSING EQUIPMENT (BY SIZE OF ESTABLISHMENT)

ESTABLISHMENT SIZE



-  BRANCH = 27 RESPONDENTS
-  INDEPENDENT = 27 RESPONDENTS
-  COMBINED = 54 RESPONDENTS

- Most respondents who are currently using word processing equipment cited IBM as the brand they were using, although there were a few mentions of other brands of standalone equipment.
 - IBM models included the Mag Card and Mag Card II, as well as the Electronic Typing System 60.
- The high initial cost of word processing equipment was considered a deterrent to its use by several respondents.
 - In the words of one respondent, "We looked at word processing, liked it, but can't go near it at current prices."

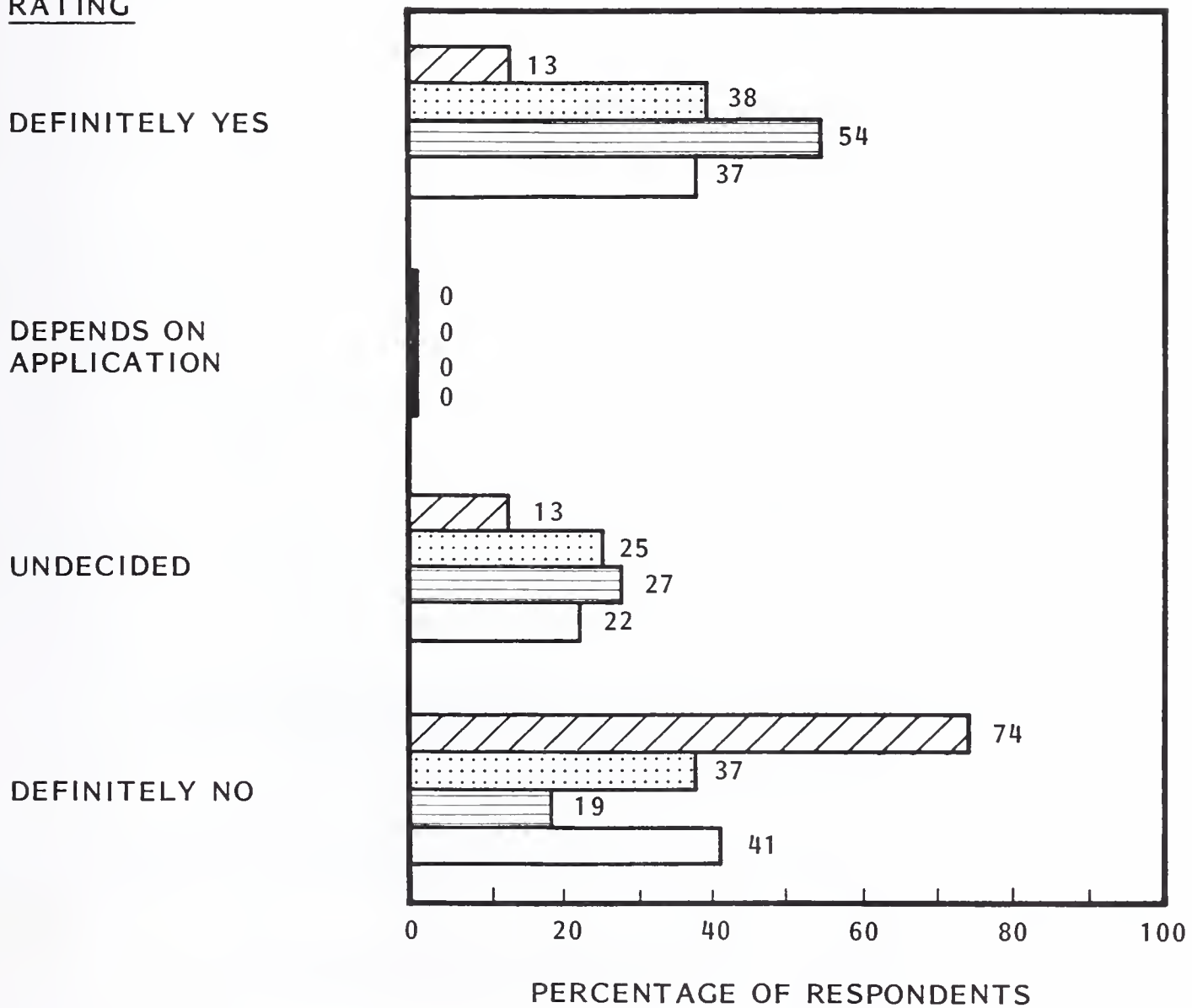
2. MULTI-FUNCTION EQUIPMENT

- Many more independent respondents were willing to consider multi-function equipment than were branch respondents, as shown in Exhibits IV-11 and IV-12.
 - Thirty-seven percent of independent respondents said multi-function equipment definitely would be desirable, and 22% more were undecided.
 - Only 7% of respondents from branch establishments stated multi-function would definitely be desirable, with another 15% tentative or undecided.
- Respondents who desired multi-function equipment would like equipment with clerical, data processing, and communications capabilities (see Exhibit IV-13).
- Costs of equipment and lack of familiarity were the major barriers to acceptance of multi-function equipment (see Exhibit IV-14).
- Typical comments included:

EXHIBIT IV-11

WOULD MULTI-FUNCTION EQUIPMENT BE DESIRABLE? (INDEPENDENTS)

RATING







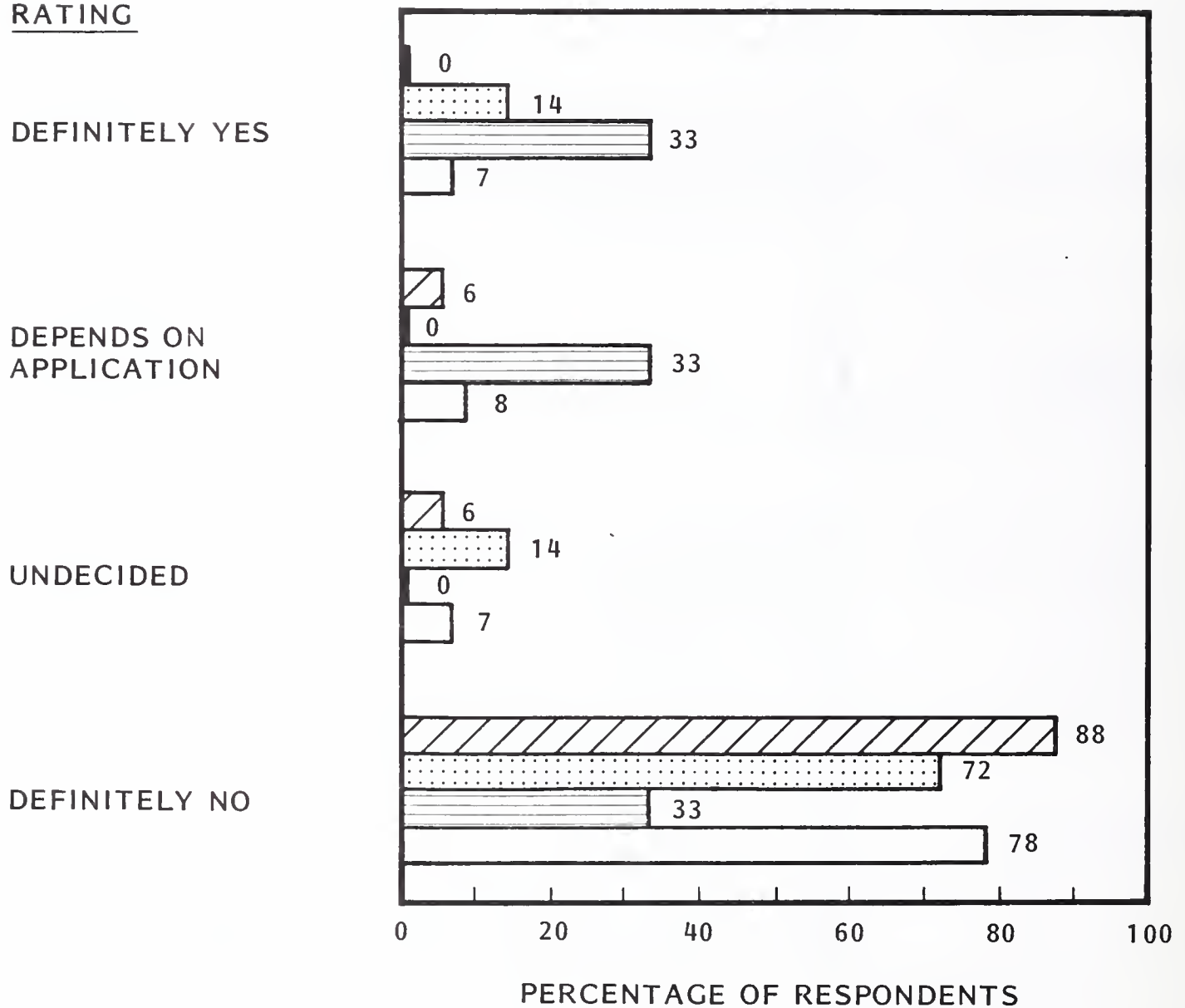
-  1-19 EMPLOYEES (N = 8)
-  20-99 EMPLOYEES (N = 8)
-  100-499 EMPLOYEES (N = 11)
-  COMBINED (N = 27)

EXHIBIT IV-12

WOULD MULTI-FUNCTION EQUIPMENT BE DESIRABLE? (BRANCHES)

RATING







-  1-19 EMPLOYEES (N = 17)
-  20-99 EMPLOYEES (N = 7)
-  100-499 EMPLOYEES (N = 3)
-  COMBINED (N = 27)

EXHIBIT IV-13

DESIRABLE FEATURES FOR MULTI-FUNCTION EQUIPMENT

- "Would be nice to combine word processing and data processing."
- "Currently have a sophisticated data processing/communications interface system."
- "Want to eventually incorporate all functions onto an in-house computer."
- "Will soon have word processing/communications ability through a central computer."
- "In a large operation, you need an interlocking of communications and data processing."
- "Will put almost all clerical duties on computer."
- "Teller machines and light typing through computer."
- "Currently using an on-line audio response, and may put in word processing."

EXHIBIT IV-14

PERCEIVED DRAWBACKS TO MULTI-FUNCTION EQUIPMENT

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "No need."
- "Too small to purchase any equipment."
- "Headquarters wouldn't consider anything so advanced for such a small branch."
- "Buying own equipment would be too expensive."
- "No need for more than the basic equipment."
- "Needs at this level are too small to justify costs."
- "Never heard of multi-function equipment."
- "Needs for this diversity are not strong enough at branches to warrant cost."
- "We're lucky to have an electric typewriter."
- "Not interested in multi-function equipment."

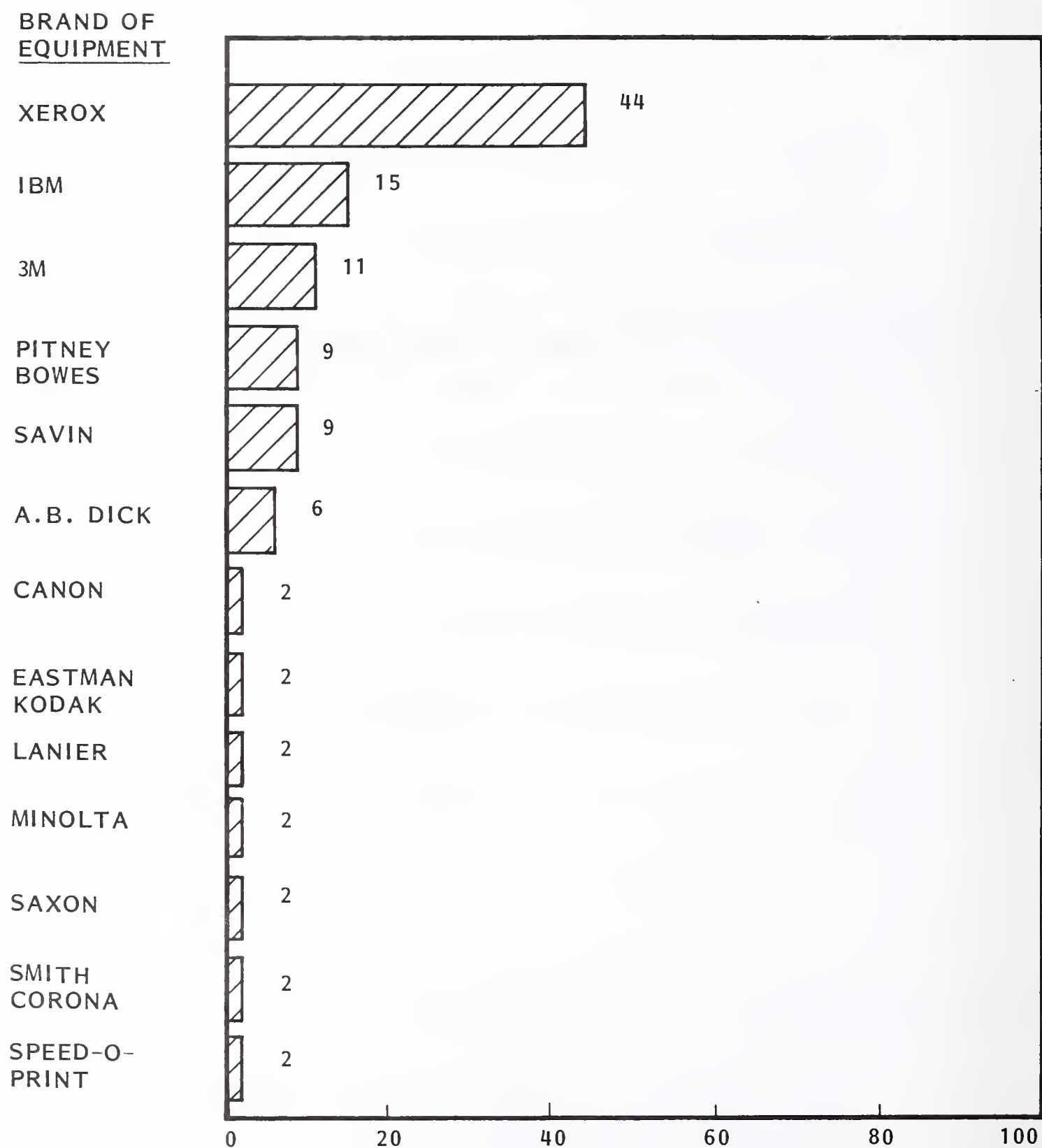
- "Headquarters wouldn't consider anything so advanced in such a small branch."
 - "Buying own equipment would be too expensive."
 - "Needs at this level are too small to justify costs."
 - "Never heard of multi-function equipment."
 - "We're lucky to have an electric typewriter."
- Nevertheless, when respondents were asked what they would like vendors to do to better meet their needs, many respondents stated they wished vendors would develop equipment with multi-function capabilities.
 - "Increase equipment capabilities."
 - "Need equipment with diversified capabilities."
 - "Would like multi-function capability."
 - "Would like easy convertibility of equipment."
 - Thus, the need for multi-function equipment exists in the banking industry. Vendors need to make banking establishments more aware of multi-function equipment and its capabilities.

3. PHOTOCOPYING EQUIPMENT

- All respondents used copier equipment as shown in Exhibit IV-15.
 - Many respondents used Xerox equipment, but there is also a broad representation of other brands.

EXHIBIT IV-15

BRANDS OF COPIER EQUIPMENT INSTALLED



(TOTAL EXCEEDS 100% AT SOME LOCATIONS DUE TO MULTIPLE BRANDS.)

PERCENTAGE OF ESTABLISHMENTS USING THIS BRAND OF EQUIPMENT

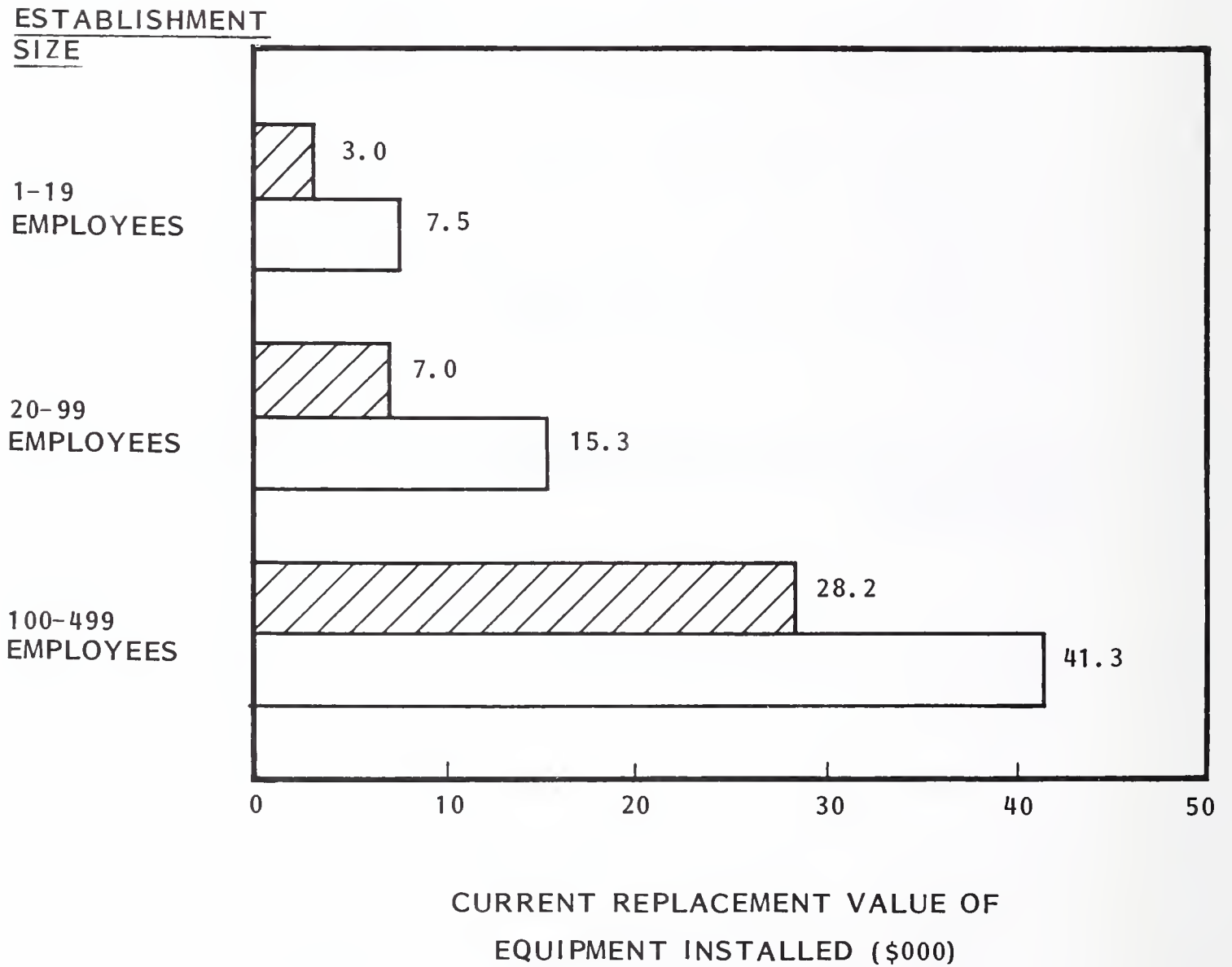
- There are notable differences in the current replacement costs of installed copier equipment between branches and independent establishments (see Exhibit IV-16).
 - Independent establishments with less than 100 employees had copier equipment installed with a current replacement value averaging more than twice that of corresponding branch locations.
 - Equivalent current replacement costs may define either a single photocopying machine, or in the larger establishments more likely may represent two or more machines.
 - Maintenance costs are not included.
 - Models of equipment installed ranged widely from simple table-top machines up through the Xerox 9200.

E. PENETRATION OF NON-TELCO COMMUNICATIONS EQUIPMENT AND SERVICES

- Usage of communications equipment by banking establishments is shown in Exhibit IV-17.
 - Note the high use of switching type equipment, both keyset and PABX.
- Most respondents used local telephone company supplied equipment.
 - Only 7% of the independent respondent establishments said that they are using interconnect equipment.
- Respondents stated some interest in communications equipment capable of handling more functions.

EXHIBIT IV-16

EQUIVALENT CURRENT REPLACEMENT COSTS OF COPIER
EQUIPMENT INSTALLED BY RESPONDENTS
(BY SIZE OF ESTABLISHMENT)



BRANCHES (N = 27)

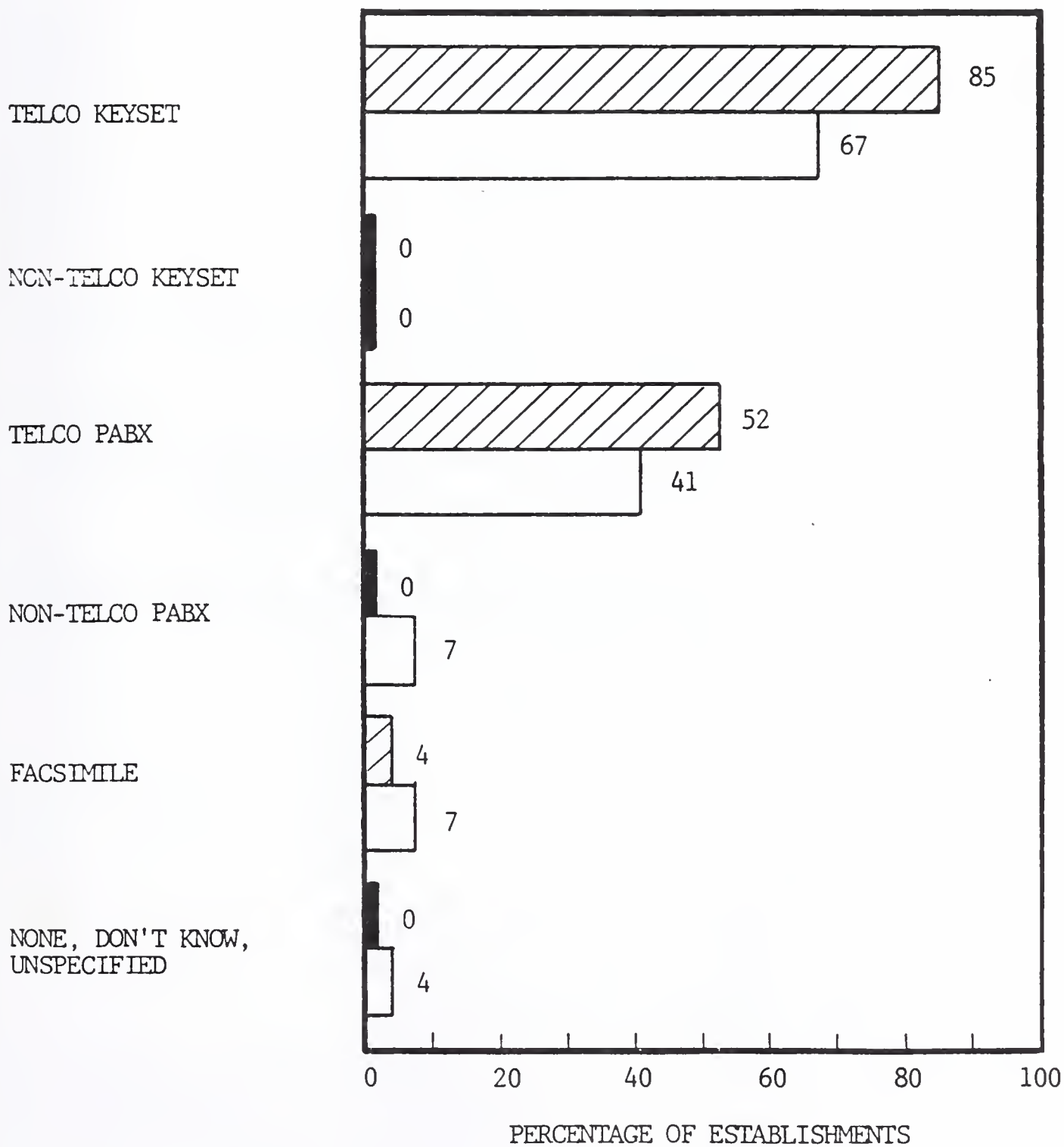



INDEPENDENTS (N = 27)


EXHIBIT IV-17

COMMUNICATIONS EQUIPMENT INSTALLED - BRANCHES AND INDEPENDENTS

EQUIPMENT TYPE



 BRANCH = 27 RESPONDENTS

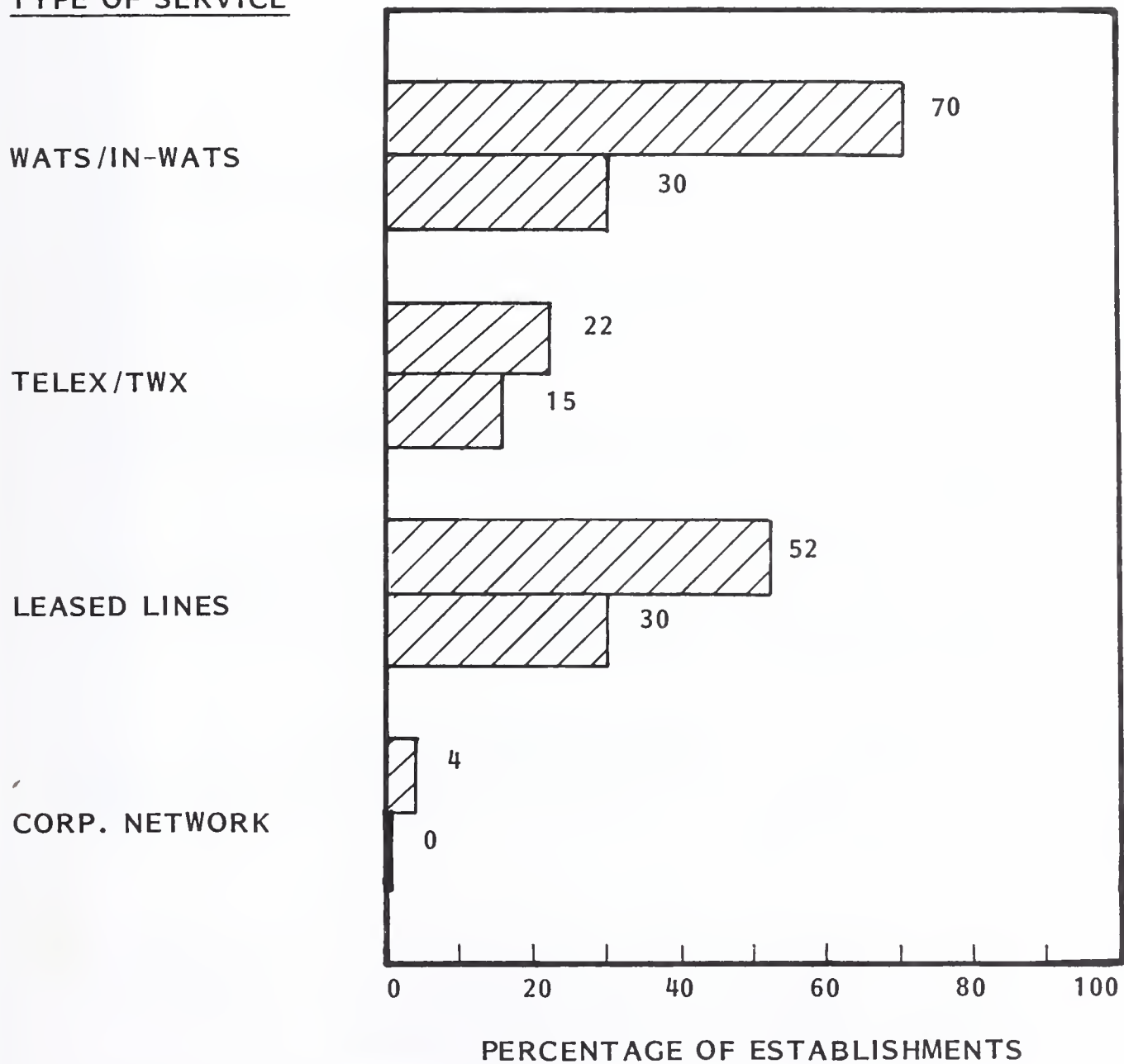
 INDEPENDENT = 27 RESPONDENTS

- Respondents felt they would be installing a 'Dimension' series PABX (AT&T), a centrex or similar installation, or would be getting interconnect equipment.
- Although there are very few interconnect installations currently, it can be expected that interconnect equipment will play a more important role in banking establishments by 1983 based on respondents' comments, such as:
 - "Looking into buying our own phone system."
 - "Will get a new communications system."
 - "The local phone company is unreliable."
- Branches used considerably more communications services than independents, as illustrated in Exhibit IV-18.
 - Fifty-two percent of branch respondents stated that they have leased lines at their location. Most of these went to headquarters.
 - Seventy percent of branches had WATS lines installed, also primarily used to contact headquarters.
- Communications services were supplied by:
 - AT&T.
 - Western Union.
 - RCA.
 - ITT.
 - MCI.

EXHIBIT IV-18

COMMUNICATIONS SERVICES INSTALLED -
BRANCHES AND INDEPENDENTS

TYPE OF SERVICE



BRANCH = 27 RESPONDENTS

INDEPENDENT = 27 RESPONDENTS

F. COMPUTER, OFFICE, AND COMMUNICATIONS NEEDS

- The majority of respondents who listed problems that still need attention referred to information retrieval which was too slow for their situation (see Exhibit IV-19). For example:
 - "Quick information is our major consideration."
 - "Getting information, especially on customer accounts, is round-about and time consuming."
- However, cost considerations are very important and at times are an obstacle.
- As shown in Exhibit IV-20, 69% of respondents stated needs that were computer related.
 - Computer related needs were most acute in branches with fewer than 20 employees or more than 100 employees.
 - However, every size category of both branches and independents had a sizable proportion of respondents who felt that there were unresolved needs in the EDP area.
- Thirty-seven percent of independent respondents and 41% of branches expected to improve timeliness of data by going on-line within two years (see Exhibit IV-21).
 - Other improvements expected within two years included first-time computer purchases, improvement/expansion of existing equipment, and a general increase in the number of applications automated.
- Most branches and independents of all sizes expected to go on-line by 1983 (see Exhibits IV-22 and IV-23).

EXHIBIT IV-19

WHAT PROBLEMS WOULD YOU LIKE TO SEE RESOLVED?

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "We must get by with less than adequate equipment because we're too small to justify expenses."
- "We're working for big brother and have no say in any of our operations."
- "We find it hard to keep on top of expenses."
- "Information is not received until the end of the day when processing goes through."
- "Quick information is our major consideration."
- "Headquarters doesn't always give us what we need."
- "Getting information, especially on customer accounts, is round-about and time consuming."
- "Automation will make things more accurate, but is too expensive for us to consider right now."
- "Any automation which can reduce the paperwork, yet not be detrimental to customer services and still be cost effective, would be great."
- "Information retrieval is a slow process."

EXHIBIT IV-19 (Contd.)

WHAT PROBLEMS WOULD YOU LIKE TO SEE RESOLVED?

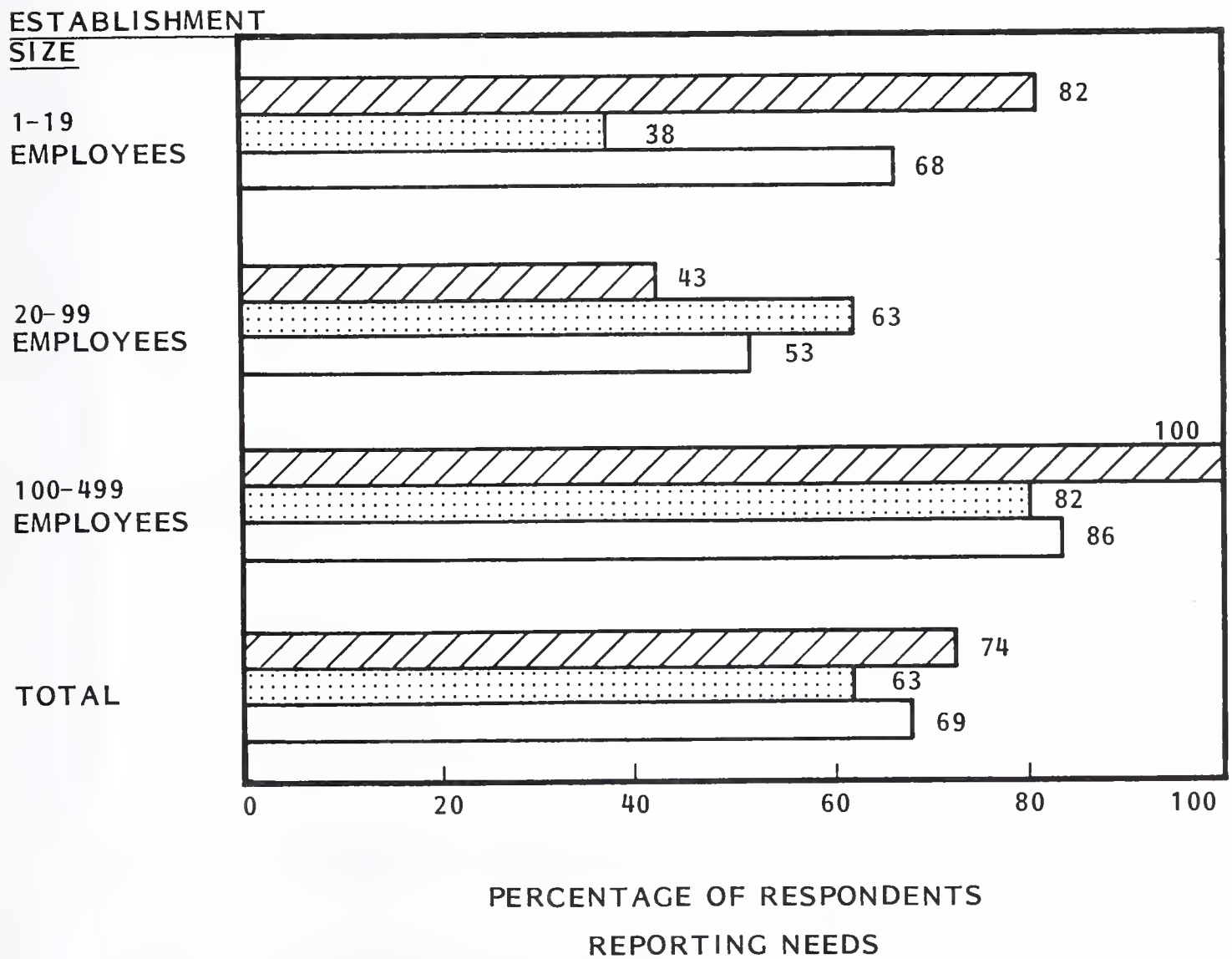
INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "Bookkeeping is slow and subject to errors."
- "The information lag."
- "We need some equipment, but all usable equipment is too expensive."
- "We have many old timers who are fighting changes brought about by automation."
- "Information retrieval is too slow."
- "Timeliness of data is a problem."
- "Time factor in relaying information."
- "We need to increase capacity and speed of data system."

EXHIBIT IV-20

NEEDS FOR ADDITIONAL COMPUTER EQUIPMENT AND SERVICES






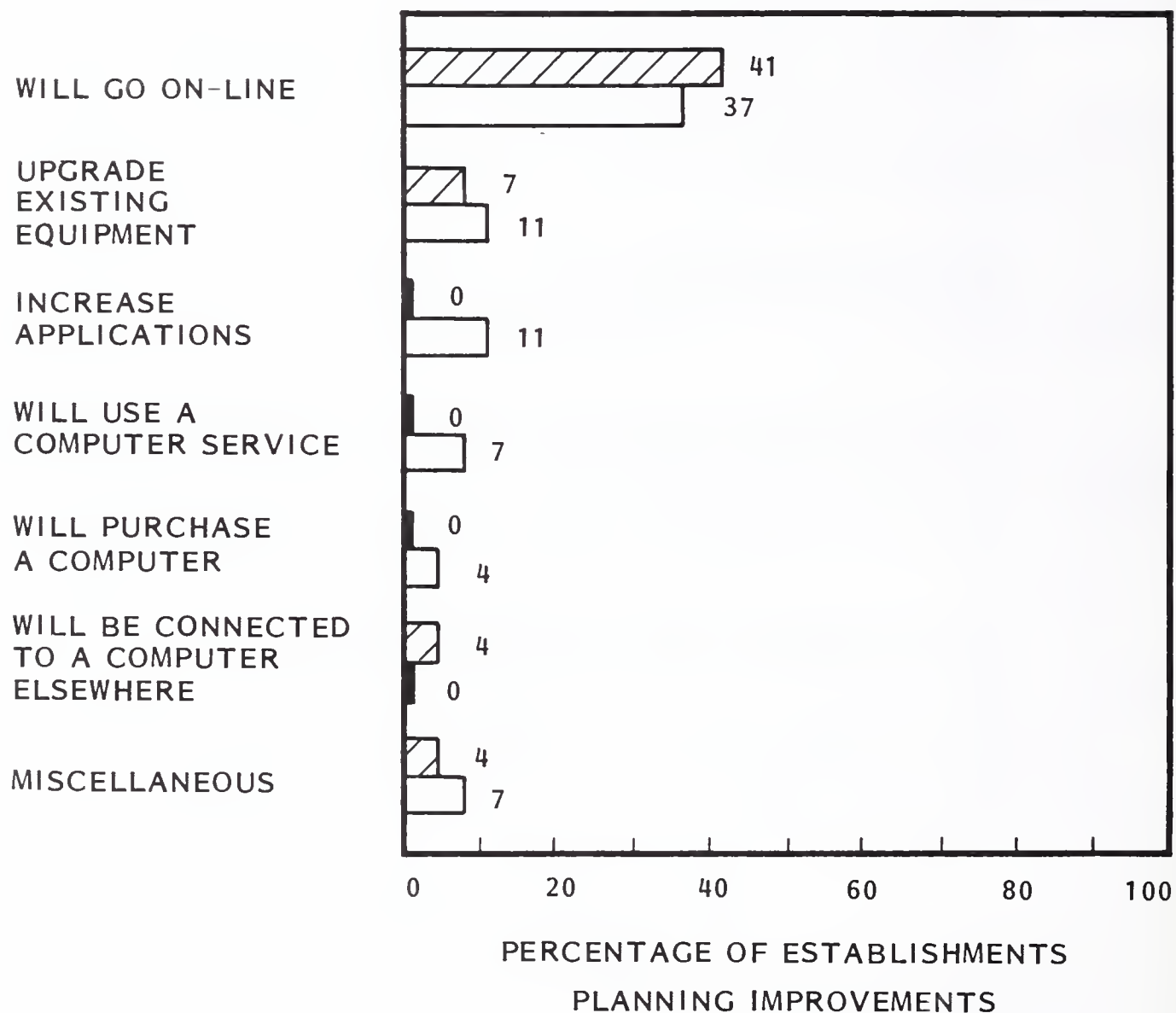
-  BRANCHES (N = 27)
-  INDEPENDENTS (N = 27)
-  COMBINED (N = 54)

EXHIBIT IV-21

COMPUTER RELATED IMPROVEMENTS EXPECTED BY RESPONDENTS BY 1980 - BRANCHES AND INDEPENDENTS



- ☒ BRANCH (N = 27)
☐ INDEPENDENTS (N = 27)

EXHIBIT IV-22

COMPUTER RELATED IMPROVEMENTS EXPECTED BY BRANCH RESPONDENTS BY 1983

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "We will be connected to a computer at headquarters and will go on-line."
- "Will go on-line."
- "Install on-line terminals."
- "Will get on-line teller machines."
- "Will get new terminals."
- "Put more operations onto the on-line terminals."
- "Will install CRT terminals."
- "Will install on-line teller machines."
- "We'll get new on-line terminals."
- "Install on-line terminals for teller use."

EXHIBIT IV-23

COMPUTER RELATED IMPROVEMENTS EXPECTED BY INDEPENDENT RESPONDENTS BY 1983

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "Switching all functions to a computer data service."
- "Install a terminal for on-line information transfer to service."
- "Will look for a computer."
- "Convert to an in-house system."
- "Put teller machines on-line."
- "Go on-line."
- "Put all functions on computer."
- "Will update the computer."
- "Will change from keypunch to disk on computer."
- "Put many clerical duties on computer."
- "Install on-line terminals to all locations."
- "Install teller machines with a direct tie to the computer."
- "Install on-line terminals at locations."

- Needs for office automation were expressed by only 15% of all respondents overall, as shown in Exhibit IV-24. Most respondents expressing needs were from establishments with more than 100 employees. However, on average, 36% of these respondents stated office automation needs.
- Needs for communications equipment and services were expressed chiefly by establishments with more than 100 employees, but more than one-fourth of all sizes of establishments had needs for communications equipment and services (see Exhibit IV-25). Again, the larger establishments expressed more than twice as many needs as the average.
- Respondents expected to meet communications needs with new communications equipment. Comments included:
 - "Looking into buying our own phone system."
 - "Looking into Comkey."
 - "Will get a phone system that includes an intercom."
 - "Will purchase a 'Dimension' system capable of expansion."
- When respondents were asked what vendors should do to better meet their needs, their comments spanned a range of factors, but the major demands were for compatibility and multi-function capabilities (see Exhibit IV-26). Other demands related to:
 - Lower costs.
 - Better service.
 - Faster equipment.

EXHIBIT IV-24

NEEDS FOR IMPROVEMENTS IN OFFICE EQUIPMENT

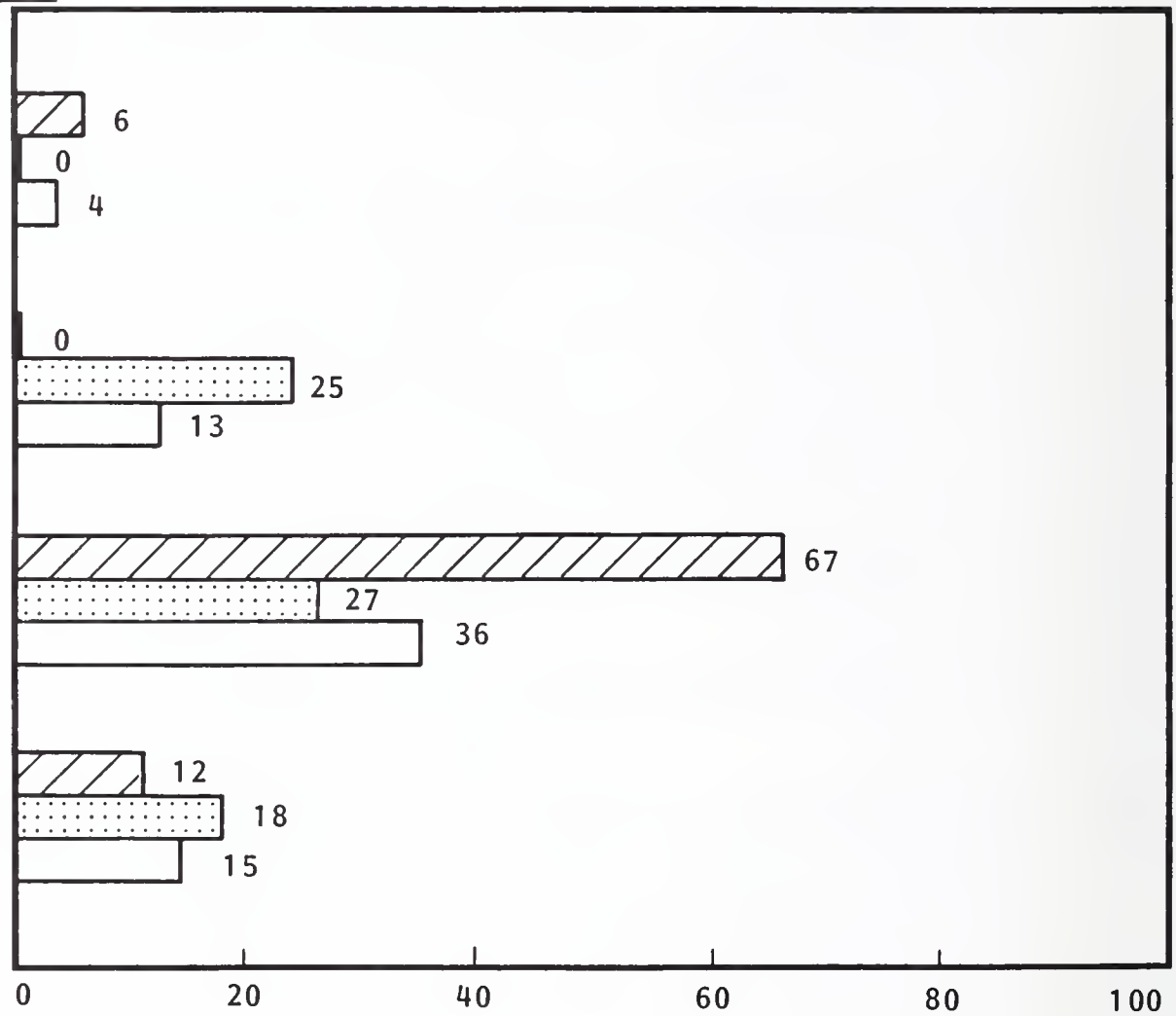
ESTABLISHMENT SIZE

1-19
EMPLOYEES

20-99
EMPLOYEES

100-499
EMPLOYEES

TOTAL



PERCENTAGE OF RESPONDENTS
REPORTING NEEDS



BRANCHES (N = 27)



INDEPENDENTS (N = 27)



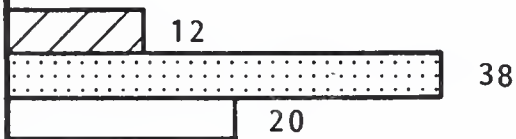
COMBINED (N = 54)

EXHIBIT IV-25

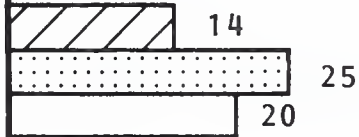
NEEDS FOR ADDITIONAL COMMUNICATIONS EQUIPMENT AND SERVICES

ESTABLISHMENT SIZE

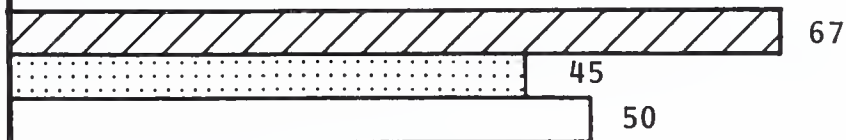
1-19
EMPLOYEES



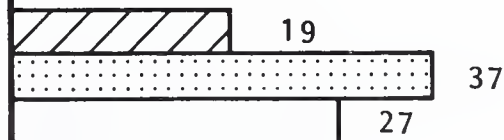
20-99
EMPLOYEES



100-499
EMPLOYEES



TOTAL



0 20 40 60 80 100

PERCENTAGE OF RESPONDENTS
WHO EXPRESSED NEEDS



BRANCHES (N = 27)



INDEPENDENTS (N = 27)



COMBINED (N = 54)

EXHIBIT IV-26

WHAT VENDORS SHOULD DO TO BETTER MEET OUR NEEDS - BRANCHES AND INDEPENDENTS

- "Ease of changeover is an important factor."
- "Technology is changing so rapidly that a piece of equipment bought today is outdated in three years. Adaptability in purchase is very important to prevent this."
- "Increase equipment capabilities."
- "Need equipment with diversified capabilities."
- "Reduce the cost of equipment. We looked at word processing, liked it, but can't go near it at current prices."
- "Make service available in this area."
- "Would like multi-function adaptability."
- "Would like easy convertibility of equipment."
- "Many larger vendors need to improve their service."
- "We need faster equipment. Hard copies of everything is an unnecessary equipment feature."

- Branches and independents have strong differences of opinion as to what the inhibiting factors are that prevent immediate resolution of automation needs. The major reason cited by branches under 100 employees was that "the decision is not made here." Independents, on the other hand, said that costs were the major factor, or that they did not have any need to make improvements. The respondents' comments are shown in Exhibit IV-27 for branches, and Exhibit IV-28 for independents.

EXHIBIT IV-27

PERCEIVED BARRIERS TO EQUIPMENT IMPROVEMENTS - BRANCHES

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "No need."
- "Headquarters is concerned with updating larger branches."
- "Headquarters."
- "Although improvements have been approved, they must wait until headquarters is ready."
- "Headquarters is very cost conscious."
- "Directives come from headquarters."
- "Improvements have been approved and budgeted, but must wait until corporate is ready."
- "Automation changes will come from corporate directives."
- "Headquarters would have to decide."
- "Waiting for corporate."
- "Corporate decides."
- "Waiting for corporate."
- "Waiting 'till corporate decides which vendor they want to go through."
- "Don't want to go ahead with equipment improvements for a while."

EXHIBIT IV-28

PERCEIVED BARRIERS TO EQUIPMENT IMPROVEMENTS - INDEPENDENTS

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "Have automated everything we want to."
- "We only take expenses as necessity and a little foresight demands."
- "No need."
- "We're too small."
- "No need."
- "No need."
- "Equipment is too expensive."
- "No need."
- "We need to resolve some reorganizational problems before we automate any further."

V APPLICATIONS ANALYSIS

V APPLICATIONS ANALYSIS

A. FUNCTIONAL USE OF COMPUTERS AND/OR COMPUTER SERVICES

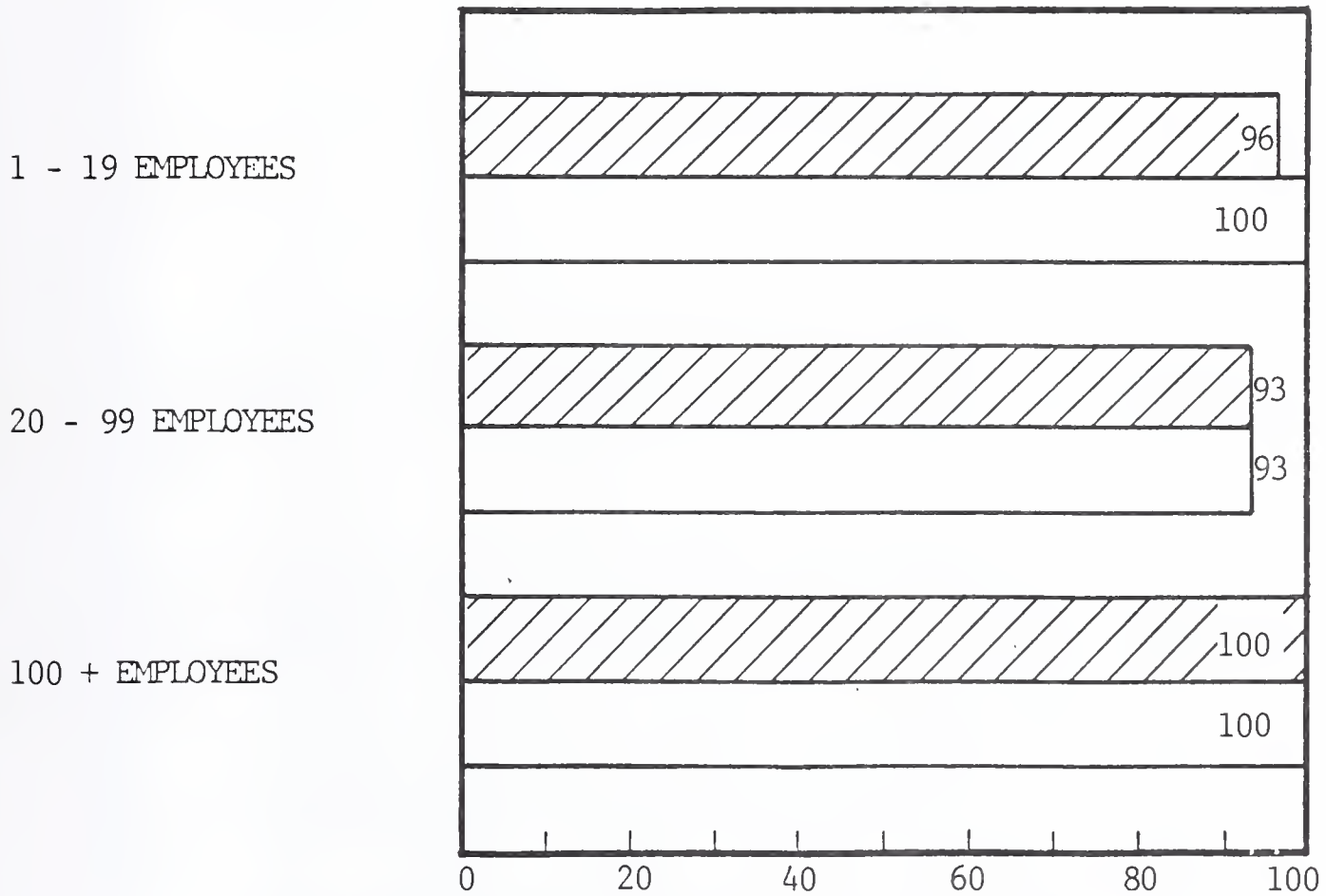
- The use of computer automation is very widespread in the banking industry and touches every banking establishment in some way or other.
 - All respondents stated that they use computer automation for financial/administrative functions, banking industry specific functions, or both.
 - Almost all establishments are using computer automation on-line, or expect to be on-line within the two to five year timeframe.
- Financial and administrative functions are defined to include:
 - Payroll.
 - Billing.
 - Accounts receivable.
 - Accounts payable.
 - General ledger.

- Banking industry specific applications are defined to include:
 - Demand deposit accounting.
 - Savings deposit accounting.
 - Consumer loan accounting.
 - Commercial loan accounting.
 - Proof of deposit.
 - Customer information systems.
 - Other banking applications.
- Automation priorities differ little between branches and independent establishments.
 - Exhibits V-1 and V-2 show that virtually all branches and independents used computers for at least one financial/administrative function and for at least one banking industry specific function. Only a small increase in automation of financial/administrative functions is projected by the under 20 employee group of respondents within 5 years.
- Examining the financial/administrative applications individually reveals that fewer independent respondents than branch respondents used computers for financial/administrative functions, but all respondents not using computers for financial/administrative functions planned to do so within 5 years, with the single exception of general ledger (see Exhibit V-3).
- There are no significant differences in usage of computer automation between large and small branch establishments.

EXHIBIT V-1

BANKING: USE OF EDP FOR FINANCIAL/ADMINISTRATIVE FUNCTIONS 1978-1983 (BY SIZE OF ESTABLISHMENT)

ESTABLISHMENT SIZE



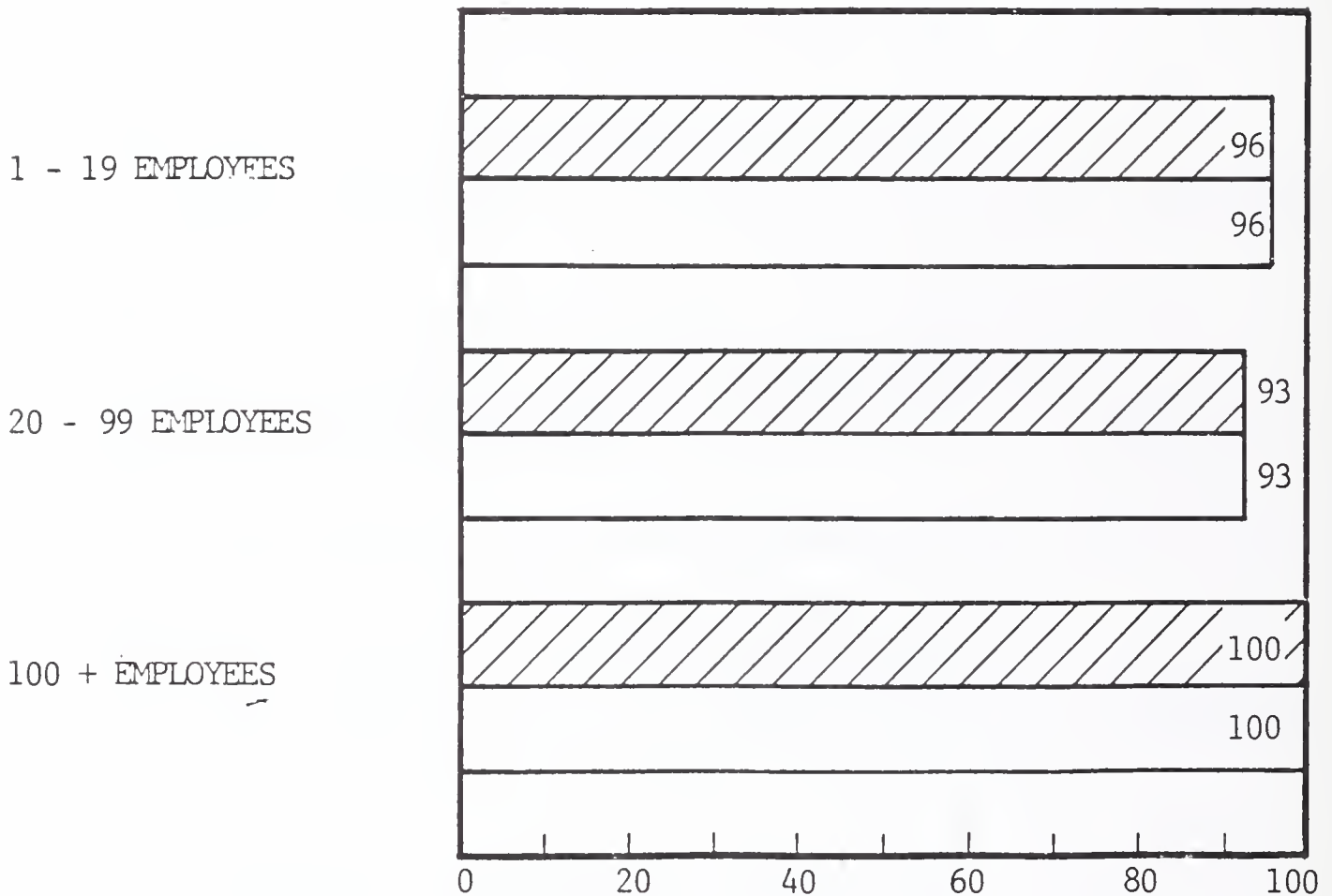
PERCENTAGE OF ESTABLISHMENTS WITH
AT LEAST ONE AUTOMATED APPLICATION
IN THE CATEGORY (N = 54)

☒ 1978
☐ 1983

EXHIBIT V-2

BANKING: USE OF EDP FOR INDUSTRY SPECIFIC
FUNCTIONS 1978-1983
(BY SIZE OF ESTABLISHMENT)

ESTABLISHMENT SIZE



PERCENTAGE OF ESTABLISHMENTS WITH
AT LEAST ONE AUTOMATED APPLICATION
IN THE CATEGORY (N = 54)

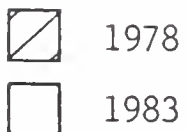


EXHIBIT V-3

BANKING: FINANCIAL/ADMINISTRATIVE APPLICATION ANALYSIS
(BY TYPE OF ESTABLISHMENT)

APPLICATIONS	PERCENTAGE OF RESPONDENTS REPLYING AFFIRMATIVELY*							
	INDEPENDENTS (N = 27)				BRANCHES (N = 27)			
	Manual Now	Automated Now	Automated In 5 Years (Additional)	Manual Now	Automated Now	Automated In 5 Years (Additional)		
<u>FINANCE & ACCOUNTING</u>								
Payroll	4%	93%	4%	-%	100%	-		
Billing	4	89	4	-	100	-		
Accounts Receivable	4	93	4	-	100	-		
Accounts Payable	7	89	7	-	100	-		
General Ledger	19	78	11	26	74	-		
Other Finance	-	4	-	-	-	-		

*On each question there was a varying percentage of 'No Responses.'
Therefore the sum of manual plus automated now may not equal 100%.

- One hundred percent of branch respondents of all sizes have automated the standard financial applications (see Exhibit V-4).
- Again, general ledger is the only financial/administrative application not fully automated.
- Independent banking establishments show some signs of the typical pattern that larger establishments are the first to be automated but, by and large, the independents of all sizes are equally advanced in terms of financial applications automated (see Exhibit V-5).
- Branches and independents are also quite similar in their use of computers for banking industry specific applications (see Exhibit V-6).
- However, banking is the only industry in which there are no significant differences in usage of computers between industry specific functions and financial/administrative functions.
 - At least 93% of both branch and independent respondents reported use of computers for demand and savings deposit accounting, the most frequently automated banking industry specific functions.
 - At least 93% of branch and independent respondents reported use of computers for payroll and accounts receivable, the most frequently automated financial/administrative functions.
- Looking separately at the individual industry specific applications, it can be seen that branch respondents in all size categories have uniformly automated all of the named applications (see Exhibit V-7).
- However, independent respondents present a less uniform pattern of specific applications that are now automated (see Exhibit V-8).

EXHIBIT V-4

BANKING: FINANCIAL/ADMINISTRATIVE APPLICATION ANALYSIS -
BRANCHES

APPLICATIONS	PERCENTAGE OF RESPONDENTS REPLYING AFFIRMATIVELY*									
	1 - 19 EMPLOYEES (N = 17)			20 - 99 EMPLOYEES (N = 7)			100+ EMPLOYEES (N = 3)			Automated In 5 Yrs. (Addl.)
	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	
FINANCE AND ACCOUNTING										
Payroll	-	100%	-	-	100%	-	-	100%	-	
Billing	-	100	-	-	100	-	-	100	-	
Accounts Receivable	-	100	-	-	100	-	-	100	-	
Accounts Payable	-	100	-	-	100	-	-	100	-	
General Ledger	35	65	-	14	86	-	-	100	-	
Other Finance	-	-	-	-	-	-	-	-	-	

*On each question there was a varying percentage of "No Responses."
Therefore the sum of manual plus automated now may not equal 100%.

EXHIBIT V-5

BANKING: FINANCIAL/ADMINISTRATIVE APPLICATION ANALYSIS -
INDEPENDENTS

APPLICATIONS	PERCENTAGE OF RESPONDENTS REPLYING AFFIRMATIVELY*									
	1 - 19 EMPLOYEES (N = 8)			20 - 99 EMPLOYEES (N = 8)			100+ EMPLOYEES (N = 11)			
	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	
FINANCIAL AND ACCOUNTING										
Payroll	13%	87%	13%	-%	87%	-%	-%	100%	-%	
Billing	13	87	13	-	87	-	9	91	9	
Accounts Receivable	13	87	13	-	87	-	-	100	-	
Accounts Payable	13	87	13	13	75	13	-	100	-	
General Ledger	38	62	25	25	62	13	-	100	-	
Other Finance	-	-	-	-	-	-	-	9	-	

*On each question there was a varying percentage of "No Responses."
Therefore the sum of manual plus automated now may not equal 100%.

EXHIBIT V-6

BANKING: INDUSTRY SPECIFIC APPLICATION ANALYSIS
(BY TYPE OF ESTABLISHMENT)

APPLICATION	PERCENTAGE OF RESPONDENTS REPLYING AFFIRMATIVELY*							
	INDEPENDENTS (N = 27)				BRANCHES (N = 27)			
	Manual	Automated Now	Automated In 5 Yrs. (Addl.)		Manual	Automated Now	Automated In 5 Yrs. (Addl.)	
Demand Deposit	- %	100%	- %		-	93%	-	
Savings Deposit	7	93	7		-	93	-	
Consumer Loans	11	78	11		-	93	-	
Commercial Loans	15	67	15		-	93	-	
Proof of Deposit	15	82	4		-	93	-	
Customer Information Systems	4	85	-		-	93	-	
Other	-	11	-		-	4	-	

*On each question there was a varying percentage of "No Responses." Therefore the sum of manual plus automated now may not equal 100%.

EXHIBIT V-7

BANKING: INDUSTRY SPECIFIC APPLICATION ANALYSIS - BRANCHES

APPLICATION	PERCENTAGE OF RESPONDENTS REPLYING AFFIRMATIVELY*									
	1 - 19 EMPLOYEES (N = 17)			20 - 99 EMPLOYEES (N = 7)			100 + EMPLOYEES (N = 3)			
	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	
Demand Deposit	-	94 %	-	-	86 %	-	-	100 %	-	
Savings Deposit	-	94	-	-	86	-	-	100	-	
Consumer Loans	-	94	-	-	86	-	-	100	-	
Commercial Loans	-	94	-	-	86	-	-	100	-	
Proof of Deposit	-	94	-	-	86	-	-	100	-	
Customer Info.	-									
Systems	-	94	-	-	86	-	-	100	-	
Other	-	-	-	-	14	-	-	-	-	

*On each question there was a varying percentage of 'No Responses.'
Therefore the sum of manual plus automated now may not equal 100%.

EXHIBIT V-8

BANKING: INDUSTRY SPECIFIC APPLICATION ANALYSIS - INDEPENDENTS

APPLICATION	PERCENTAGE OF RESPONDENTS REPLYING AFFIRMATIVELY*									
	1 - 19 EMPLOYEES (N = 8)			20 - 99 EMPLOYEES (N = 8)			100 + EMPLOYEES (N = 11)			Automated In 5 Yrs. (Addl.)
	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	Manual	Automated Now	Automated In 5 Yrs. (Addl.)	
Demand Deposit	- %	100%	- %	- %	100%	- %	- %	100%	- %	
Savings Deposit	25	75	25	-	100	-	-	100	-	
Consumer Loans	25	50	13	-	88	-	9	91	-	
Commercial Loans	25	50	25	13	63	13	9	82	9	
Proof of Deposit	50	38	13	-	100	-	-	100	-	
Customer Info.										
Systems	13	50	-	-	100	-	-	100	-	
Other	-	13	-	-	13	-	-	9	-	

*On each question there was a varying percentage of 'No Responses.'
Therefore the sum of manual plus automated now may not equal 100%.

- There are plans for advancement in each of the size categories of independent establishments.
- The overall picture is that of an industry which has reached maturity in its use of data processing, even among the smallest establishments.
- The evaluation correlates well with respondents' stated plans to convert to fully on-line operations in those establishments which are not already in this mode.

B. TECHNICAL RESOURCE REQUIREMENTS

- The already high level of use of on-line systems in the banking industry presents a great opportunity for vendors to sell additional computer equipment and services.
- Banks are good candidates for distributed data processing, in order to gain faster access to customer data while reducing communications costs and providing more flexibility for expansion.
- EFT will be a driving force, as will the growing use of automatic (unmanned) teller terminals (ATM's).
- Customer Information Systems are effectively implemented as distributed data bases, with part of the information maintained centrally and part maintained at the branch where the customer has his account.
- This implies a need for smart terminals with local storage capacity and compatible communications interfaces to IBM, NCR, and Burroughs hardware.

- Software vendors who are experienced in DDP communications technology are in demand to manage the development and installation of DDP systems in banking establishments.

VI EQUIPMENT AND SERVICES MARKETS

VI EQUIPMENT AND SERVICES MARKETS

A. SIZE OF MARKET

- Banking establishments spend an average of \$1,734 per employee per year for:
 - Computer equipment, services, and supplies (not including personnel).
 - Office equipment (not including personnel).
 - Communications equipment and services (not including personnel).
- For the typical sized establishment in each size category, these figures translate into the following annual budgets:
 - 1-19 employee category, averaging 10 employees: \$ 17,340
 - 20-99 employee category, averaging 28 employees: \$ 48,552
 - 100-499 employee category, averaging 189 employees: \$327,726
- Exhibit VI-1 shows the total current equipment and services expenditures for the entire banking industry, amounting to \$1.8 billion annually.

EXHIBIT VI-1

TOTAL CURRENT EQUIPMENT AND SERVICES EXPENDITURES OF THE BANKING INDUSTRY

EXPENDITURE CLASSIFICATION	1 - 19 EMPLOYEES	20 - 99 EMPLOYEES	100 - 499 EMPLOYEES	TOTAL
EDP EQUIPMENT SERVICES, AND SUPPLIES	\$128.4M	\$195.7M	\$107.4M	\$ 431.5M
OFFICE EQUIPMENT	112.6M	171.6M	94.1M	378.3M
COMMUNICATIONS EQUIPMENT AND SERVICES	296.8M	452.8M	248.2M	997.8M
TOTAL	\$537.8M	\$820.1M	\$449.7M	\$1,807.6M

M = MILLIONS

- This total does not account for personnel to operate any of the equipment, whether computer, office, or communications related.
- EDP personnel costs aggregated for establishments in this size range normally amount to 150-200% of EDP equipment costs.
- Expenditure information was verified by examining the cost of the installed equipment listed by respondents during interviews.

B. BASIS FOR BUDGETING

- Branches of large banks normally add or replace equipment under the direction of headquarters.
 - Even though 54% of branch respondents cited using past budgets to formulate this year's budget, the relevancy of expenditures at a branch level is in large measure a transfer of costs that are determined centrally and then assigned to the various profit centers.
 - One respondent stated, "Although improvements have been approved, they must wait until headquarters is ready."
 - Another respondent stated, "Improvements have been approved and budgeted, but must wait until corporate is ready."
 - A third respondent found himself in the same situation. He stated, "We're waiting until corporate decides which vendor they want to go to."
- Independent banking establishments normally prepare their budgets based on past expenditure patterns, and/or treat new equipment as a capital investment to be specifically reviewed and approved.

- Smaller independents use an outside computer service. Budgets consist of forecasted adjustments to last year's RCS charges, based on any known changes in rates, volumes, or both.
- Larger independent banking establishments often have specific budgetary guidelines, and use past budgets for expenditure projections.
- For a percentage breakdown of respondents' budget techniques, see Exhibit VI-2.

C. POTENTIAL USE OF INFORMATION PROCESSING EQUIPMENT

- The amount of information processing equipment installed in a banking establishment is a function of:
 - The threshold level of equipment costs themselves.
 - The improved price/performance ratio of new equipment.
 - Costs for the equivalent function performed by outside computer services.
 - A cost/benefit evaluation of equipment plus personnel, versus computer services (plus fewer or no personnel), versus a mix of equipment and services.
- The number of potential users of computer equipment as a function of the cost of this equipment, is shown for small establishments within the banking sector in Exhibit VI-3. This curve shows that the potential number of computer systems in use will increase from about 400 systems if the cost is \$310,500 per system to over 36,000 systems if the cost drops to \$24,840 per system.

EXHIBIT VI-2

BASIS FOR BUDGETING

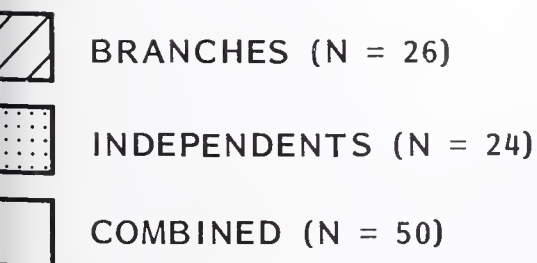
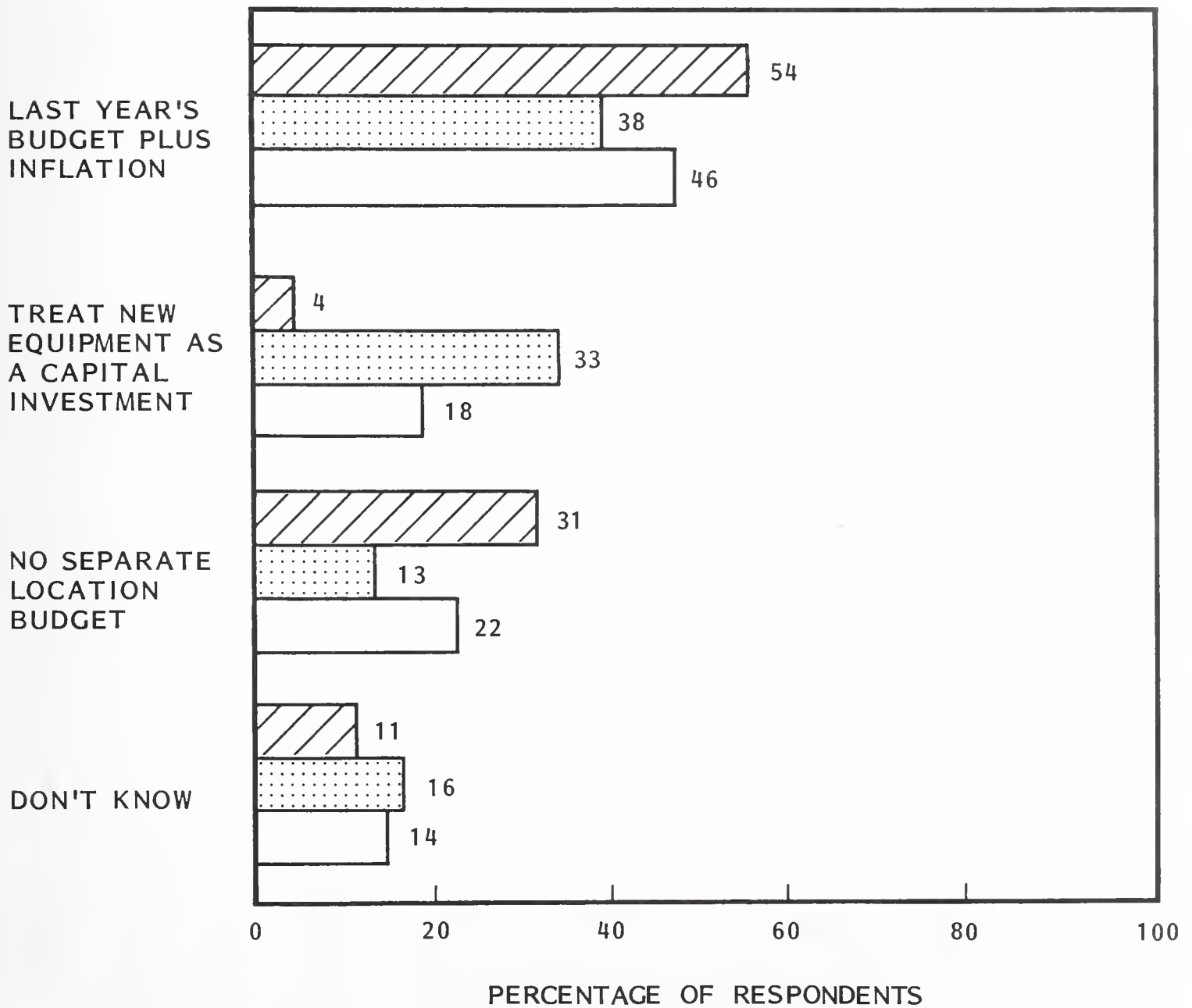
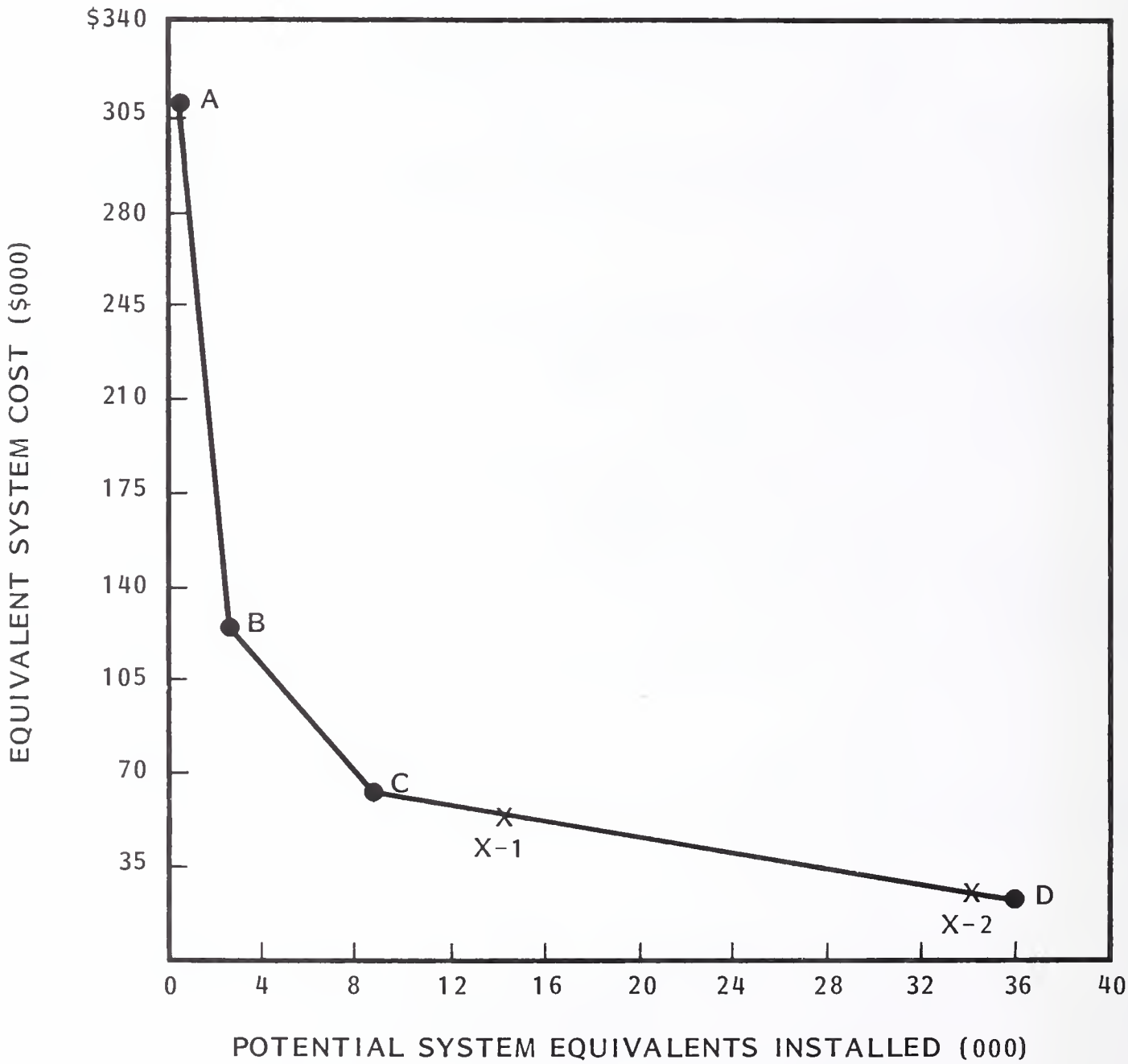


EXHIBIT VI-3

POTENTIAL FOR COMPUTER INSTALLATIONS
AMONG BANKING INDUSTRY SMALL ESTABLISHMENTS
WITH 20 EMPLOYEES OR MORE



X = CURRENT OPERATING POINT

- Implications of this potential installation curve are that:
 - A decrease in system cost by a factor of 12.5 (from \$310,500 down to \$24,840) results in an increase in the potential users of equipment by a factor of 95.4 (from 382 systems up to 36,432 systems).
 - The rapid growth in the number of small establishments using EDP equipment is due to the fact that there are many more companies of 20 employees in size than there are companies of 250 employees in size. As the cost of EDP equipment drops, the threshold of its affordability by small companies is crossed, and more firms become potential users.
 - Larger companies (250 employees in size) will use larger computer systems than small companies (50 employees in size). Since a measure of the EDP equipment potential is required, it was assumed that a large establishment will spend the same amount per employee as a smaller firm. Thus, the curve in Exhibit VI-3 was drawn in computer equivalents, resulting in a small establishment of 250 employees using the equivalent of several smaller computers, while a smaller firm of 50 employees uses only one computer. This type of presentation more accurately portrays computer-related expenditures by the user.
- While Exhibit VI-3 shows the potential use of EDP equipment as a function of system price, Exhibit VI-4 shows the same information in tabular form extrapolated to produce a dollar market value derived in the following manner:
 - An average annual expenditure of \$414 per employee on computer equipment and services was used. (Chapter II-A.) The assumption was that this amount would produce an equal utility value whether spent all on equipment or divided between equipment and services.

EXHIBIT VI-4

POTENTIAL MARKET VALUE FOR COMPUTER INSTALLATIONS AMONG BANKING INDUSTRY SMALL ESTABLISHMENTS WITH 20 EMPLOYEES OR MORE

REFERENCE POINT	MINIMUM NUMBER OF EMPLOYEE/ESTAB. SIZE GROUP	SYSTEM COST (\$000)	MARKET VALUE (\$ MIL)	SYSTEM EQUIVALENTS
A	250	310.5	118.5	382
B	100	124.2	322.1	2593
C	50	62.1	545.5	8784
D	20	24.8	903.5	36432

LEGEND :

- (1) SIZE GROUPS: 20-49, 50-99, 100-249, 250-499.
- (2) SYSTEM COST=MINIMUM NUMBER OF EMPLOYEES/ESTABLISHMENT(1) x\$414
EMPLOYEE (AVERAGE ANNUAL EDP EXPENDITURE/EMPLOYEE X 3 (NUMBER
OF YEARS AMORTIZATION) (E.G: 250 X 414 X 3 = \$310,500)
- (3) MARKET VALUE = \$414 X 3 X NUMBER OF EMPLOYEES IN EACH ESTABLISHMENT
SIZE CATEGORY AND ALL LARGER CATEGORIES. (E.G: "A": \$1242 X 95.4K =
\$118.5M, "B": \$1242 X 259.3K = \$322.1M)
- (4) SYSTEM EQUIVALENTS = MARKET VALUE (3) ÷ SYSTEM COST (2) (E.G: \$118.5M
÷ 310.5K = 382)

- The purchase price of a computer system was divided over three years to determine its annual cost; e.g., a \$66,000 computer system has an annual cost of \$22,000. Carrying charges are disregarded because they will vary for each individual establishment.
- The number of employees in the establishment was multiplied by \$414 per employee to calculate the potential establishment expenditures for EDP equipment. If this amount was more than one-third of the potential computer cost, the establishment was classified as a potential user.
- The potential market value for EDP equipment is equal to the cost of the computer multiplied by the number of computer equivalents installed.
- Ordinarily no allowance would be made for firms of under 20 employees, because in most industries they have not yet shown any appreciable penetration of EDP. The banking industry does show penetration of EDP at this level, however. The effect of this penetration is to move the current operating point from "X-1" to "X-2" on the scale of Exhibit VI-3. Point E, showing total saturation of computer equipment, would occur at coordinates of one million system equivalents at a cost per system of \$1,242; i.e., one system equivalent per employee.
- The potential curve for EDP equipment agrees with INPUT's current penetration estimates, which show 96% or 13,100 establishments of 20-499 employees having on-site computing equipment at an average system equivalent price of \$53,000; i.e., point "X-1" on Exhibit VI-3. When the penetration figures for establishments of less than 20 employees are factored in, the operating point shifts to "X-2." This point represents 33,860 system equivalents at \$28,000 per system equivalent.

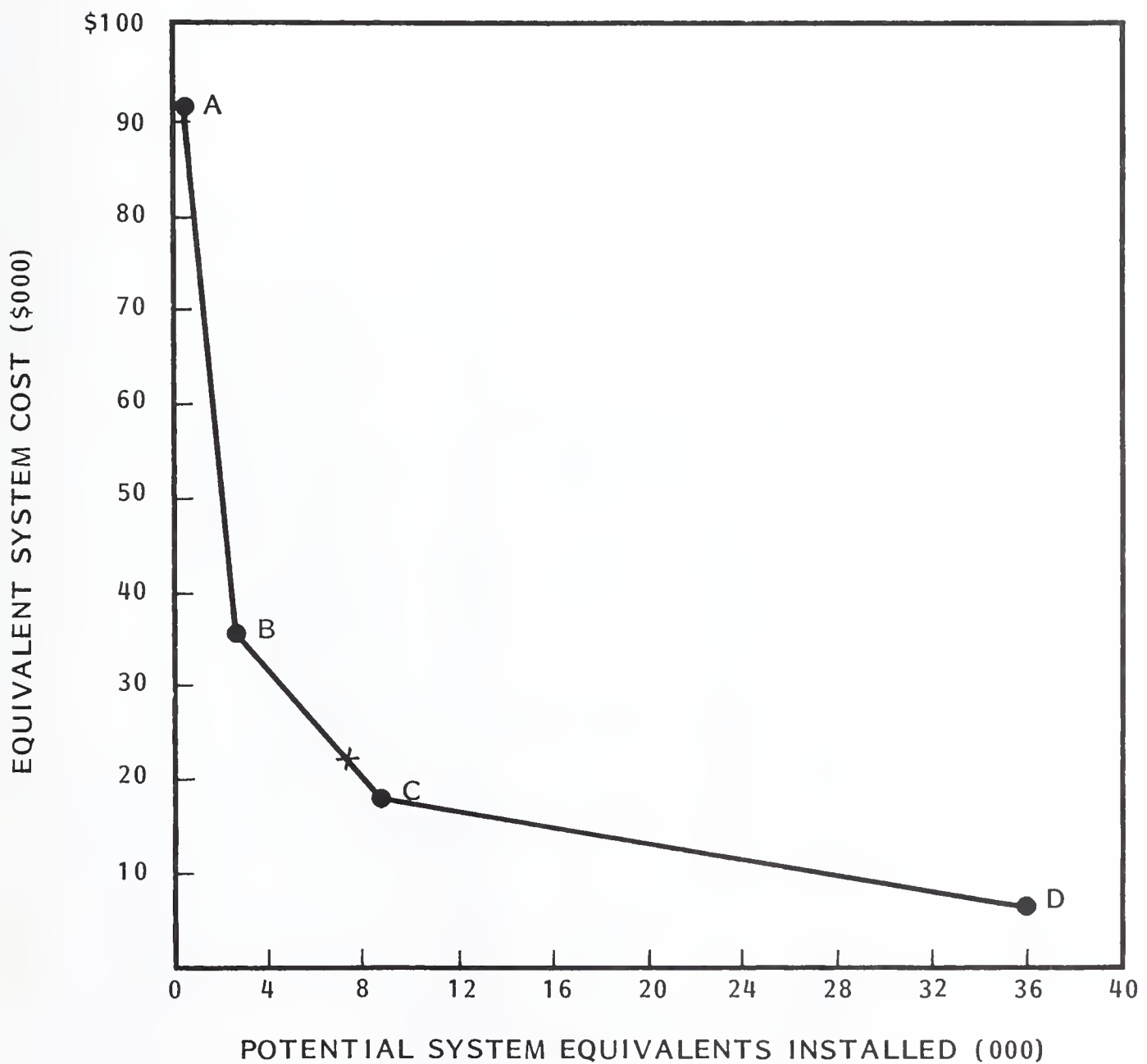
- The same methodology has been applied to office automation (word processing) and the results are shown in Exhibit VI-5 as a graph and VI-6 as a table. Assumptions are the same as above, plus:
 - One-third of the \$363 current annual expenditure per employee on office equipment is available for word processing.
 - A three-year payout, not adjusted for a growth in the work force, maintenance, or carrying charges, makes the basis a conservative estimate.
- The office automation curve agrees with INPUT's current penetration estimate of 15%, or 7,532 system equivalents installed at an average cost of \$22,000 per user establishment. (Present users are using multiple systems which cost from \$10,000 to \$20,000 each.)
 - This current operating point is near point "C" on Exhibit VI-5.
 - Note that no allowance was made for firms of under 20 employees, which makes the estimate conservative at the low end of the scale. Here the threshold for the "average" small (10 employee) establishment is a system cost of \$3,630. As yet, there is only a 4% penetration among establishments of this size. However, the cost of \$3,630 is well above the \$1,775 price of the IBM Electronic Typing System 60. Thus, this end of the market has potential for very rapid growth if the degree of automation provided by this relatively simple equipment proves to be adequate for banking establishments.

D. MARKET GROWTH FORECASTS

- The overall size of the market, together with the degree of penetration of information processing automation, is growing rapidly due to the penetration

EXHIBIT VI-5

POTENTIAL FOR OFFICE AUTOMATION INSTALLATIONS
AMONG BANKING INDUSTRY SMALL ESTABLISHMENTS
WITH 20 EMPLOYEES OR MORE



X = CURRENT OPERATING POINT

EXHIBIT VI-6

POTENTIAL MARKET VALUE FOR OFFICE AUTOMATION AMONG BANKING INDUSTRY SMALL ESTABLISHMENTS WITH 20 EMPLOYEES OR MORE

REFERENCE POINT	MINIMUM NUMBER OF EMPLOYEE/ESTAB. SIZE GROUP	SYSTEM COST(\$)	MARKET VALUE (\$ MIL)	SYSTEM EQUIVALENTS
A	250	90,750	34.6	382
B	100	36,300	94.1	2593
C	50	18,150	159.4	8784
D	20	7,260	264.1	36432

LEGEND :

- (1) SIZE GROUPS: 20-49, 50-99, 100-249, 250-499.
- (2) SYSTEM COST=MINIMUM NUMBER OF EMPLOYEES/ESTABLISHMENT(1) x \$121
EMPLOYEE (AVERAGE ANNUAL WP EXPENDITURE/EMPLOYEE X 3 (NUMBER
OF YEARS AMORTIZATION) (E.G: 250 X 121 X 3 = \$ 90,750)
- (3) MARKET VALUE = \$121 X 3 X NUMBER OF EMPLOYEES IN EACH ESTABLISHMENT
SIZE CATEGORY AND ALL LARGER CATEGORIES. (E.G: "A": 363 X 95.4K =
\$34.6M; "B": \$ 259.3X 259.3K = \$ 94.1M)
- (4) SYSTEM EQUIVALENTS = MARKET VALUE (3) ÷ SYSTEM COST (2) (E.G: \$34.6M
÷ 90,750 = 382)

of smaller, cheaper, and more cost effective products. Thus, a forecast made on the basis of industry sector growth would be too low.

- The best way to forecast the market for EDP and office automation equipment is to examine the effect of the introduction of equipment which is improving its price/performance ratio by 15% per year for EDP and 10% per year for text editing equipment. Then the future potential market penetration as a function of the price/performance improvement is calculated and converted to a growth percentage per year. (Note: these improvements are smaller than in the large mainframe area because of the large component of mechanical peripherals.)
- The 15% annual improvement in the price/performance ratio for EDP equipment results in a cost decrease by a factor of 2.0 between 1978 and 1983. For office automation equipment, the 10% annual improvement in the price/performance ratio results in a cost decrease of 1.6 by 1983. The average on-site computing equipment now in use by banking establishments has a systems equivalent cost of \$28,000, and the average text editing equipment installed has an equivalent cost of \$22,000. Using the price/performance ratios of 2.0 and 1.6, by 1983 these equivalent prices will be \$14,000 and \$11,000. Note that this is an equivalent price/performance change, since the actual prices will not drop as much as the equipment functions will improve.
- Using these figures and the maximum theoretical market penetration charts, Exhibits VI-3 and VI-5, it can be seen that the growth in the maximum theoretical penetration over five years is 26% per year for EDP equipment and also 26% per year for office automation equipment. If the same ratio of actual versus possible penetration would hold true in 1983, these percentages would become the market growth figures. However, most banks expect to emphasize the move to on-line systems during this time period, which will absorb most of the potential investment capital and cause a corresponding de-emphasis of word processing systems. Therefore, the market growth figure is downgraded to 20% per year for office automation equipment.

- The potential for growth in the sale of computer services to small establishments in the banking sector is the same as the potential for growth in the sale of computer equipment to these firms, based on the high expected growth rate planned by vendors of services to small establishments in the banking sector, and based on the expected liberalization of regulations concerning savings and loan associations.
- Communications services will grow in banks at the same rate as the overall corporate use of communications will grow. This is 7% per year for voice, 20% per year for data communications and 9% overall.
- Communications equipment such as PABX and facsimile is expected to grow by the same percentage per year as the office automation equipment to which it is similar.
- The growth in use of supplies will follow that of the equipment which uses the supplies.

VII PURCHASE POINTS AND DECISION PROCESS

VII PURCHASE POINTS AND DECISION PROCESSES

A. PREFERRED INFORMATION SOURCES

- As shown in Exhibit VII-1, most branches let someone else research information processing equipment. Branch respondents felt headquarters "had a mind of its own" or that corporate edicts did not permit equipment research. Some representative comments from branch respondents are contained in Exhibit VII-2.
 - Note that two branch respondents felt they had leeway to recommend equipment.
- Unlike branches, contact with salesmen was the most common source of information among independent respondents (see Exhibit VII-3).
 - Information was most often obtained by contacting salesmen. Many respondents said that the contact was made predominately to arrange equipment demonstrations.
 - Additional comments by respondents from independent establishments repeatedly emphasize loyalty to previous salesmen/suppliers. Thus the first placement of equipment or services becomes crucial to continued business with those establishments (see Exhibit VII-4).

EXHIBIT VII-1

PREFERRED INFORMATION SOURCES AS REPORTED
BY RESPONDENTS - BRANCHES

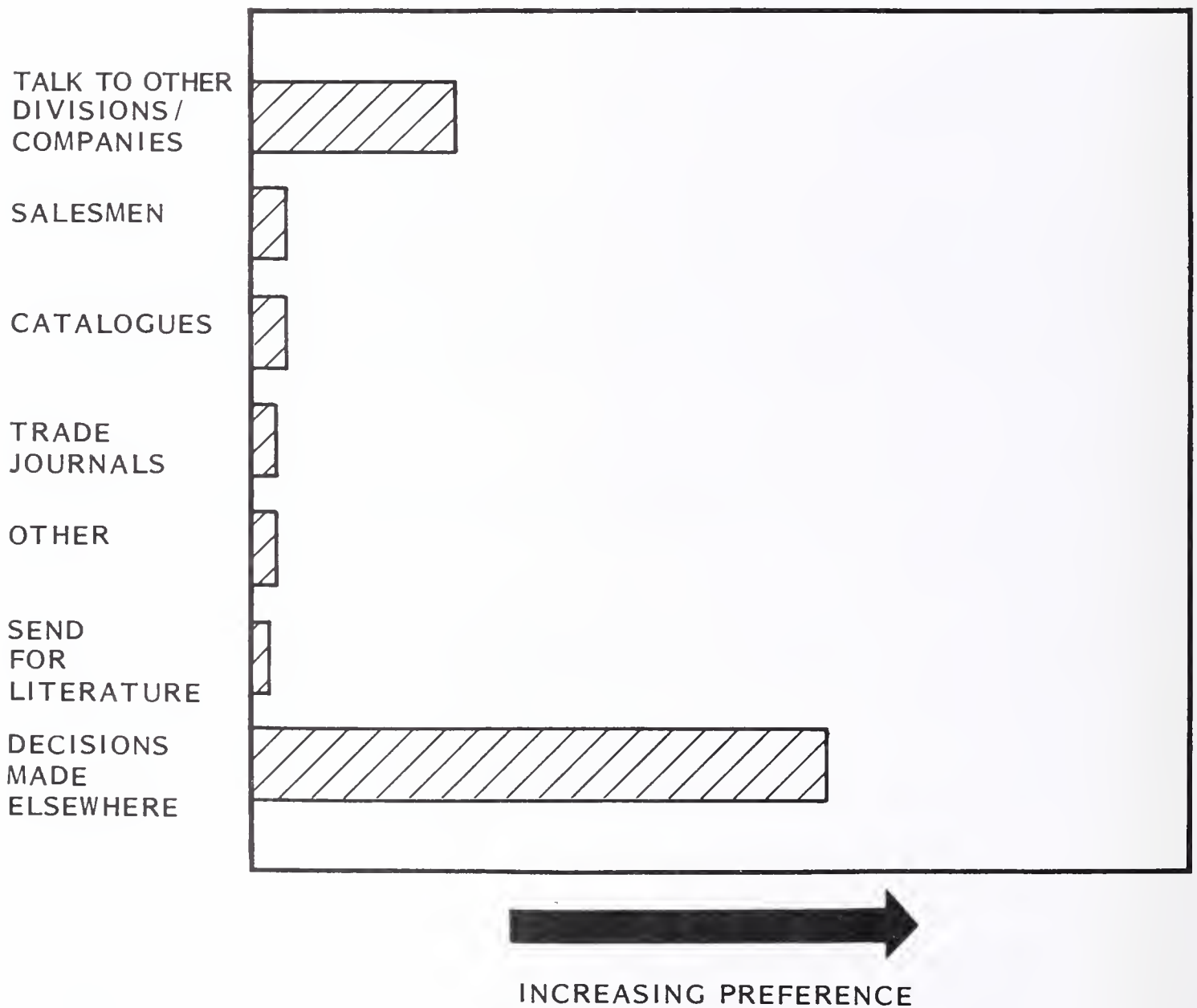


EXHIBIT VII-2

PREFERRED INFORMATION SOURCES - COMMENTS FROM BRANCH RESPONDENTS

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "All purchasing is from the main branch."
- "Call the headquarters representative."
- "Headquarters does all investigation and purchasing."
- "Don't do any purchasing research at this location."
- "Send a memo to headquarters."
- "Corporate does all equipment research."
- "Get an opinion from the corporate research group."
- "Research is done by the central supply department."
- "Call headquarters."
- "After 25 years in this position, I am well aware of what equipment I want."
- "Previous dealings with companies."
- "Corporate performs research in order to find the best brand."

EXHIBIT VII-3

PREFERRED INFORMATION SOURCES AS REPORTED
BY RESPONDENTS - INDEPENDENTS

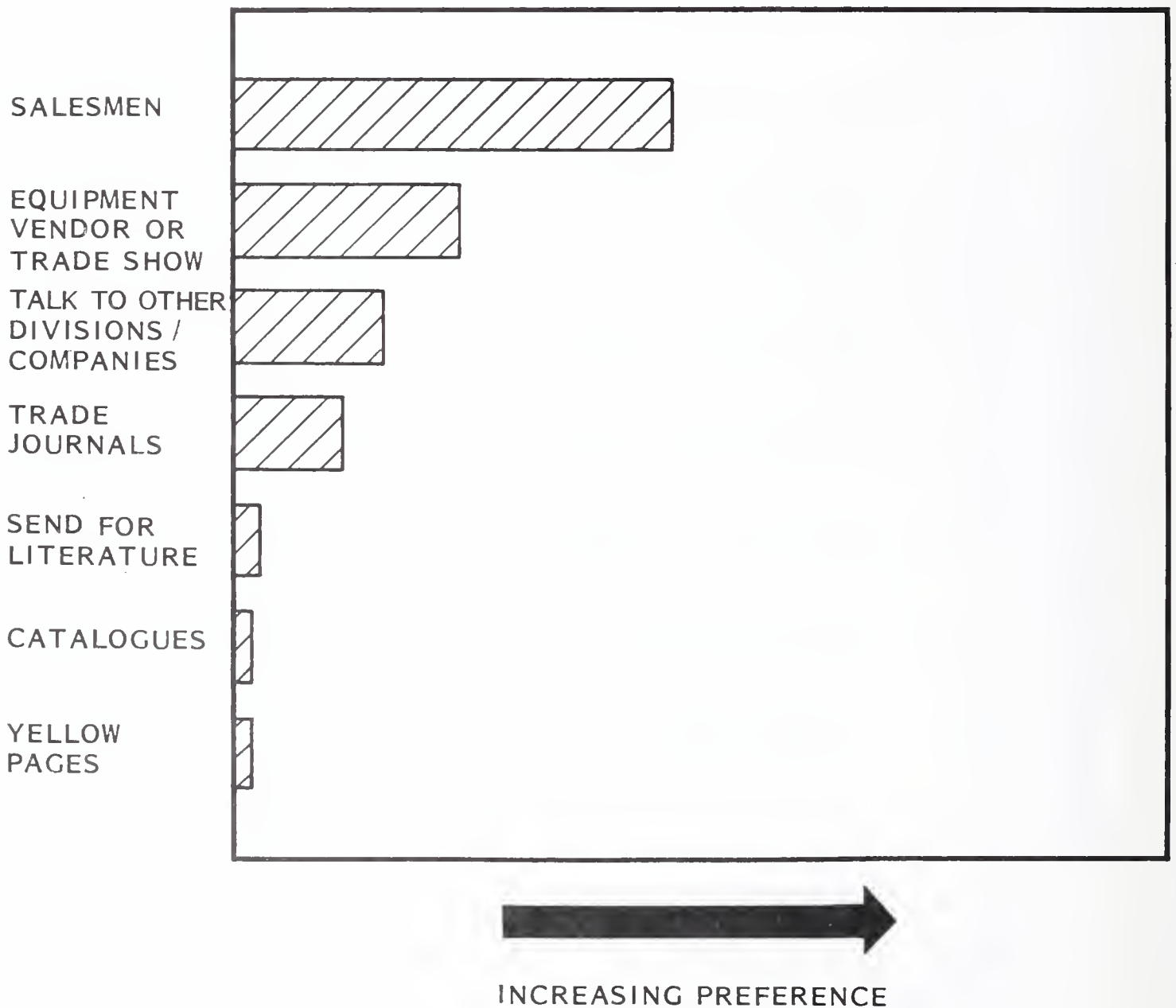


EXHIBIT VII-4

PREFERRED INFORMATION SOURCES - COMMENTS FROM INDEPENDENT RESPONDENTS

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "I wait for sales calls."
- "Contact manufacturers we previously dealt with."
- "Arrange demonstrations on premises."
- "I don't bother looking. Sales representatives are always at our door."
- "Local business equipment shows are sponsored annually by the community council."
- "Contact name brand companies in the area."
- "See what other companies are doing."
- "I call and request an equipment demonstration."
- "We contact the IBM rep periodically."
- "Contact previously purchased brands."
- "For specific purchases, use the buyer's lab update."
- "Call companies who have given good service in the past."

- Attending a trade show sponsored by a vendor was the second most common information source mentioned by independent respondents.
- Repeated salesman contact with independent and branch establishments is an important aspect of selling to the banking industry.
 - Even though most branch respondents do not research equipment, they do present equipment and services needs to headquarters.

B. WHERE PURCHASE DECISIONS ARE MADE

- In most industries independent establishments make more purchase decisions at their own location than do branches. The banking industry is an extreme example of this phenomenon. Very few bank branches make purchase decisions at their locations.
- Nevertheless, most branch respondents report that they do participate in purchase decisions to varying degrees.
 - At the very least, branch locations identify needs.
 - Other modes of involvement include making equipment and brand recommendations, participating on review committees, accepting and evaluating trial installations, and working on standards.
- Exhibit VII-5 indicates that 93% of branch respondents and all independent respondent establishments are involved in some way in decisions to obtain computer equipment and/or computer services.
 - There was no differential involvement between computer equipment or computer services.

EXHIBIT VII-5

IS THIS LOCATION INVOLVED IN THE DECISION
TO OBTAIN COMPUTER EQUIPMENT AND/OR
COMPUTER SERVICES?

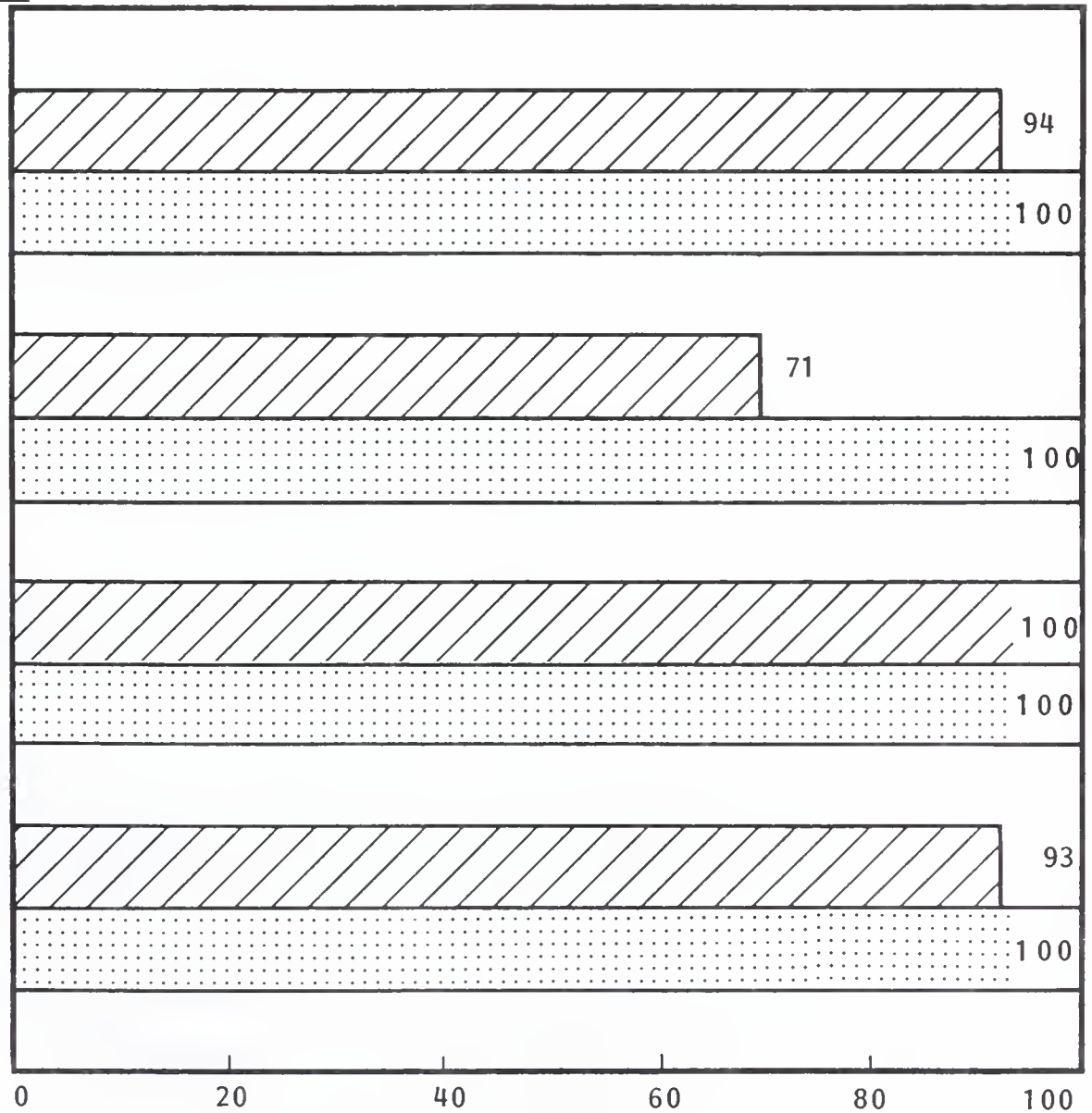
ESTABLISHMENT
SIZE

1-19
EMPLOYEES

20-99
EMPLOYEES

100-499
EMPLOYEES

COMBINED



PERCENTAGE OF RESPONDENTS WHO
ANSWERED AFFIRMATIVELY



BRANCH (N = 27)

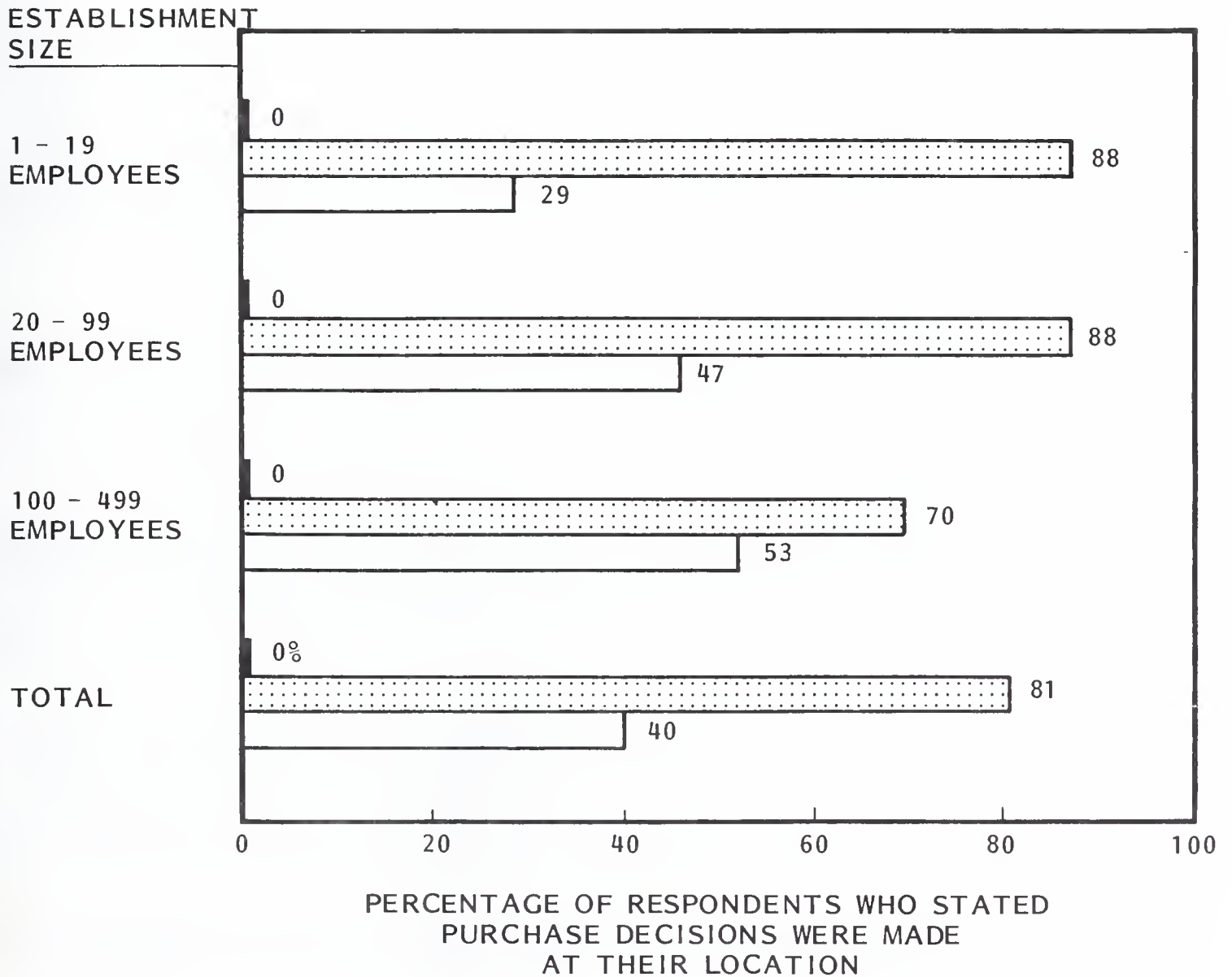


INDEPENDENT (N = 27)

- Interestingly, medium sized branch establishments reported less involvement than either larger or smaller establishments.
- As for the location where the final purchase decision is made regarding computer equipment and services, no branch respondents reported that purchase decisions for computer equipment and services were made at their own locations (see Exhibit VII-6).
 - Over 80% of independent respondents made these purchase decisions at their locations.
 - Purchase decisions were often made at holding companies for those independent establishments who did not make purchase decisions at their own location.
- Similar to the pattern of response regarding computer equipment and services, there was strong involvement by branches as well as independents in purchase decisions for office equipment, as shown in Exhibit VII-7.
- However, branch respondents now indicated some freedom to purchase office equipment and services on their own.
 - More branches made purchase decisions at their own locations as their size increased, ranging from 13% of the smallest branch establishments to 33% of the largest locations (see Exhibit VII-8).
 - More than 50% of all respondents stated that purchase decisions for office equipment were made at their own locations.
- Involvement in the purchase decision for communications equipment and/or communications services continues to be strong, whether at branch or independent establishment locations (see Exhibit VII-9).

EXHIBIT VII-6

IS THE DECISION TO PURCHASE COMPUTER EQUIPMENT AND/OR COMPUTER SERVICES MADE HERE?






-  BRANCHES (N = 27)
-  INDEPENDENTS (N = 27)
-  COMBINED (N = 54)

EXHIBIT VII-7

IS THIS LOCATION INVOLVED IN THE
DECISION TO OBTAIN OFFICE EQUIPMENT?

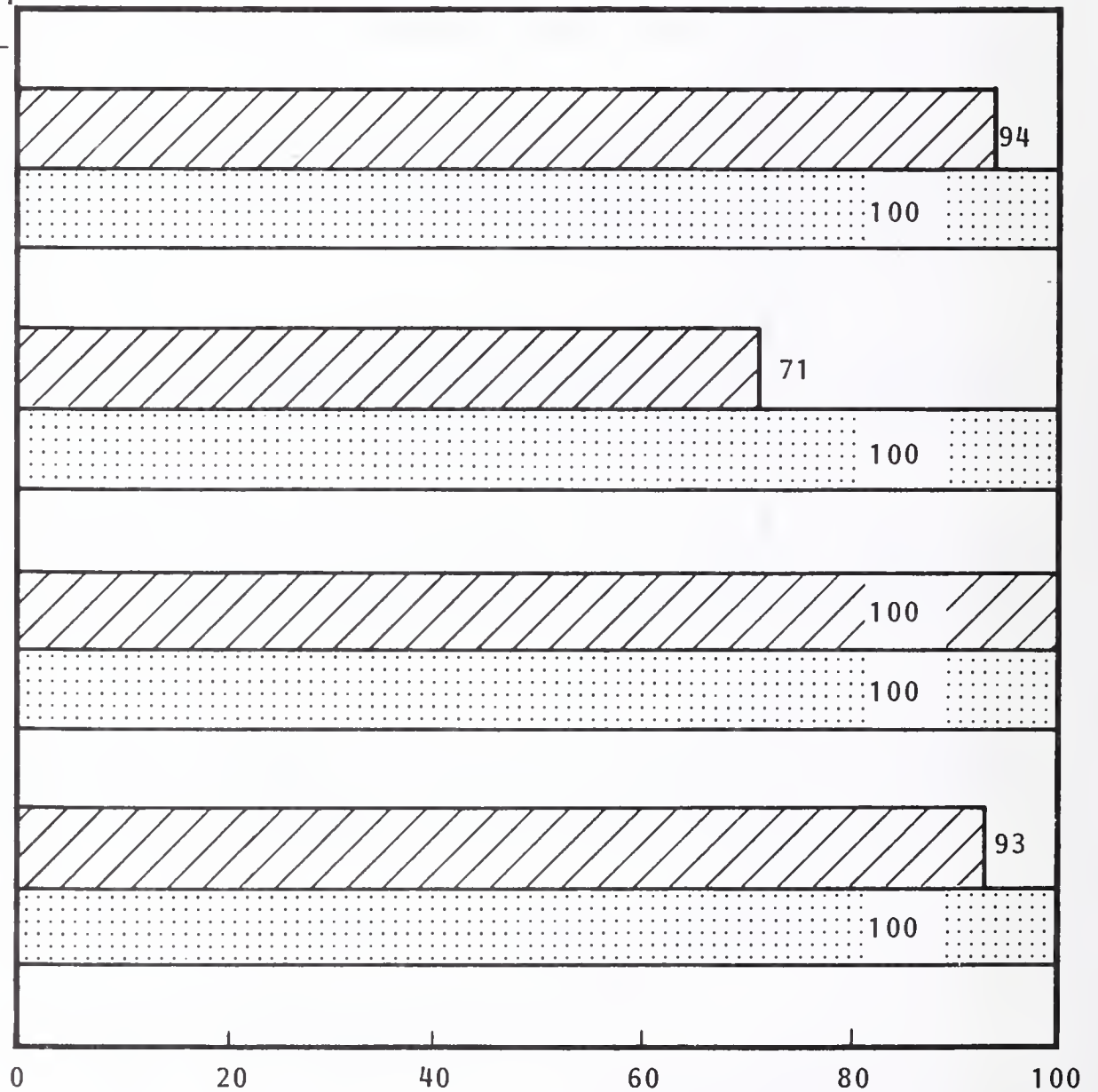
ESTABLISHMENT
SIZE

1 - 19
EMPLOYEES

20 - 99
EMPLOYEES

100 - 499
EMPLOYEES

COMBINED



PERCENTAGE OF RESPONDENTS WHO
ANSWERED AFFIRMATIVELY



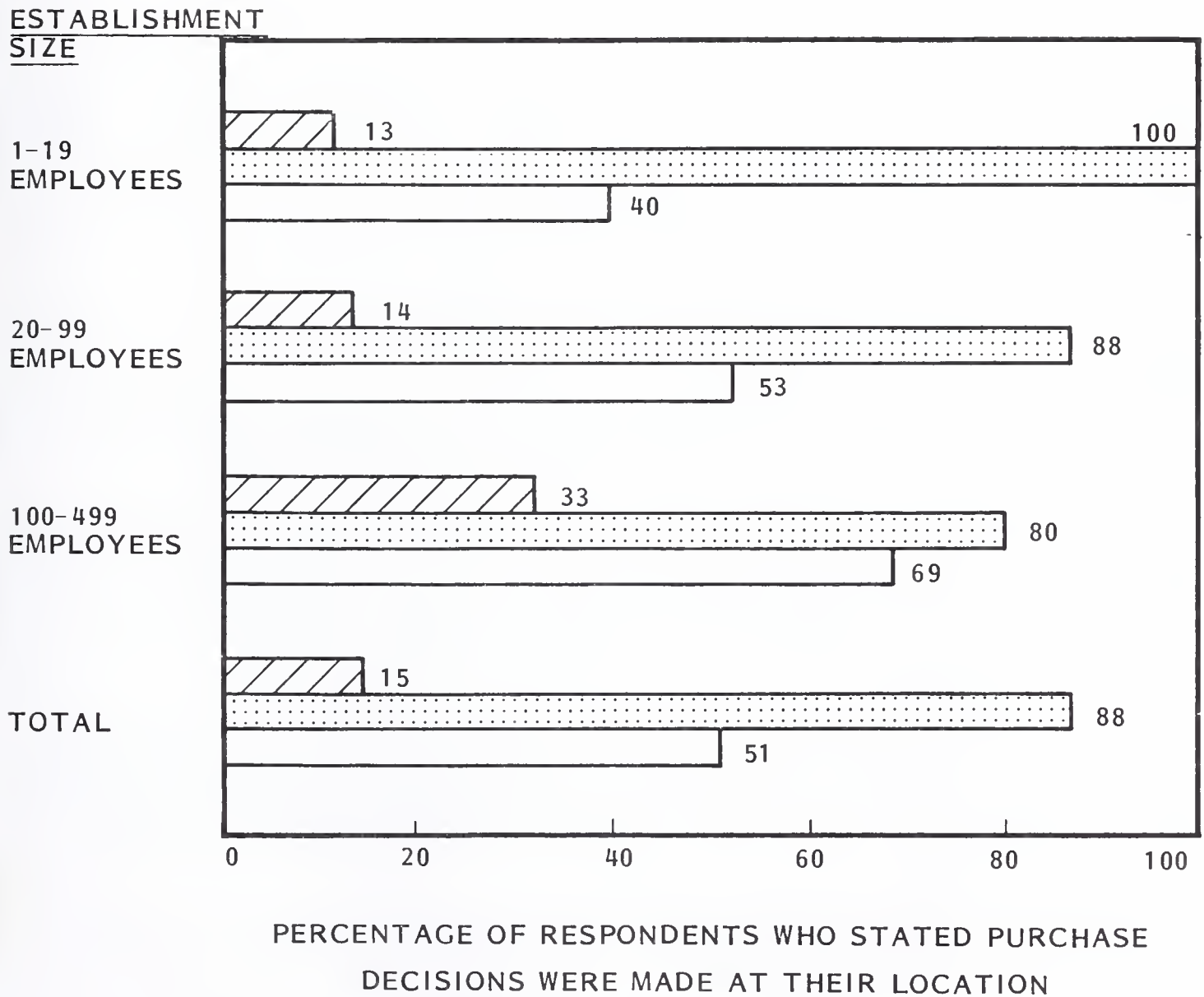
BRANCH (N = 27)



INDEPENDENT (N = 27)

EXHIBIT VII-8

IS THE DECISION TO PURCHASE OFFICE EQUIPMENT MADE HERE?






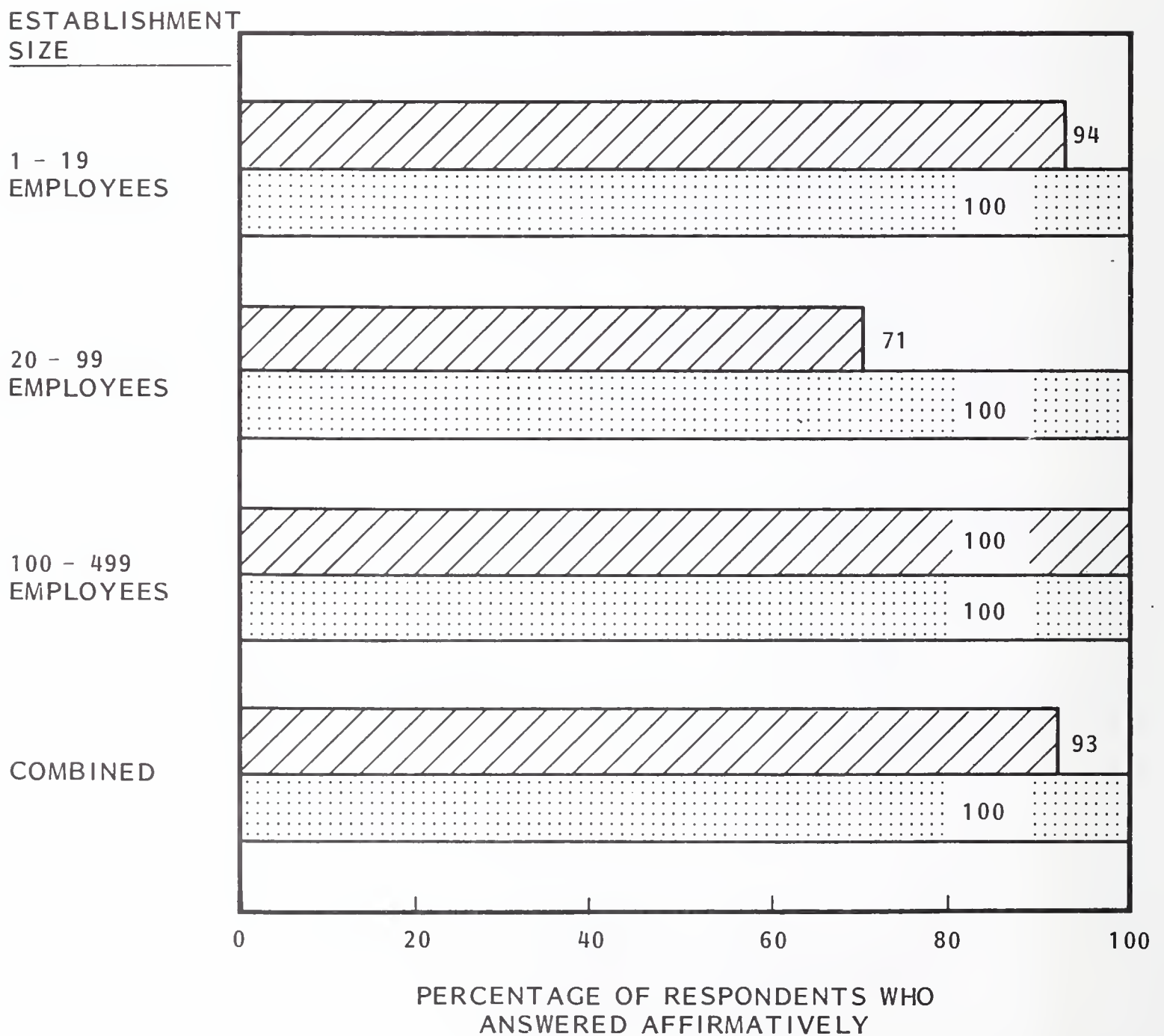
 BRANCHES (N = 27)
 INDEPENDENTS (N = 27)
 COMBINED (N = 54)

EXHIBIT VII-9

IS THIS LOCATION INVOLVED IN THE DECISION TO OBTAIN
COMMUNICATIONS EQUIPMENT AND/OR COMMUNICATIONS SERVICES?



BRANCH (N = 27)

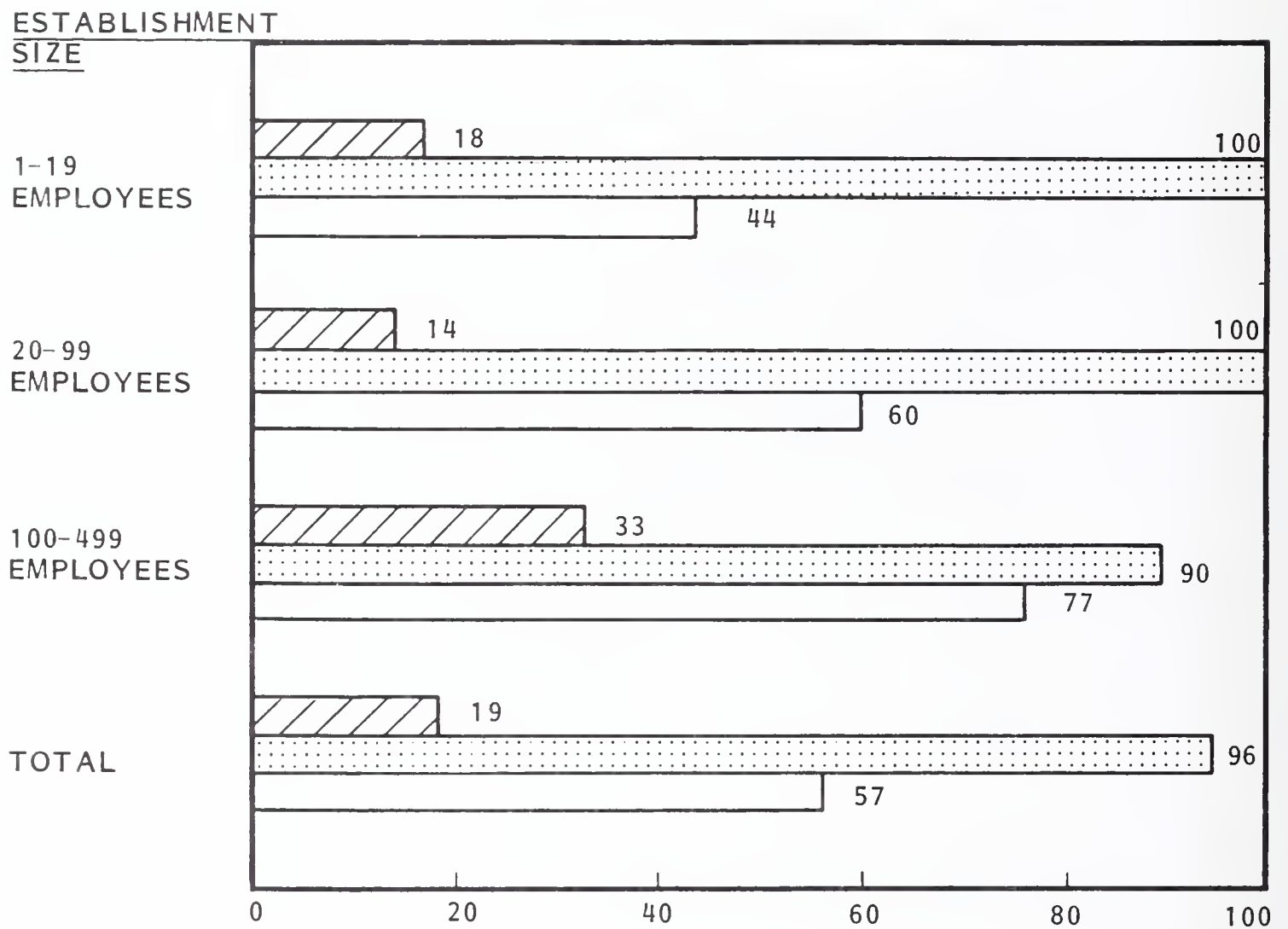


INDEPENDENT (N = 27)

- However, for the first time slight differences appear among the smallest employee-size category of branches as to their freedom to proceed with actual purchase decisions.
 - Eighteen percent of the smallest branch respondents make purchase decisions to obtain communications equipment (see Exhibit VII-10).
 - Twenty percent of this size group make purchase decisions to obtain communications services (see Exhibit VII-11).
- Significantly more freedom to obtain communications equipment and services was demonstrated than for computer or office equipment.
 - Almost half of respondents from establishments with less than 20 employees stated that purchase decisions for communications equipment and services were made at their locations.
 - All respondents from independent establishments with less than 100 and almost all independent establishments over 100 employees, stated that purchase decisions were made at their locations.
 - Altogether, 60% of respondents stated that they make purchase decisions at their own locations for communications equipment and services.
- As for supplies, all respondents reported that their locations are involved in purchase decisions (see Exhibit VII-12).
 - More than 90% of respondents reported that final purchase decisions for supplies were also made right at their own locations (see Exhibit VII-13).
 - In this case, differences between branches and independents were insignificant. Eighty-eight percent of all sizes of branches and 92% of

EXHIBIT VII-10

IS THE DECISION TO PURCHASE COMMUNICATIONS EQUIPMENT MADE HERE?



PERCENTAGE OF RESPONDENTS WHO STATED PURCHASE
DECISIONS WERE MADE AT THEIR LOCATION




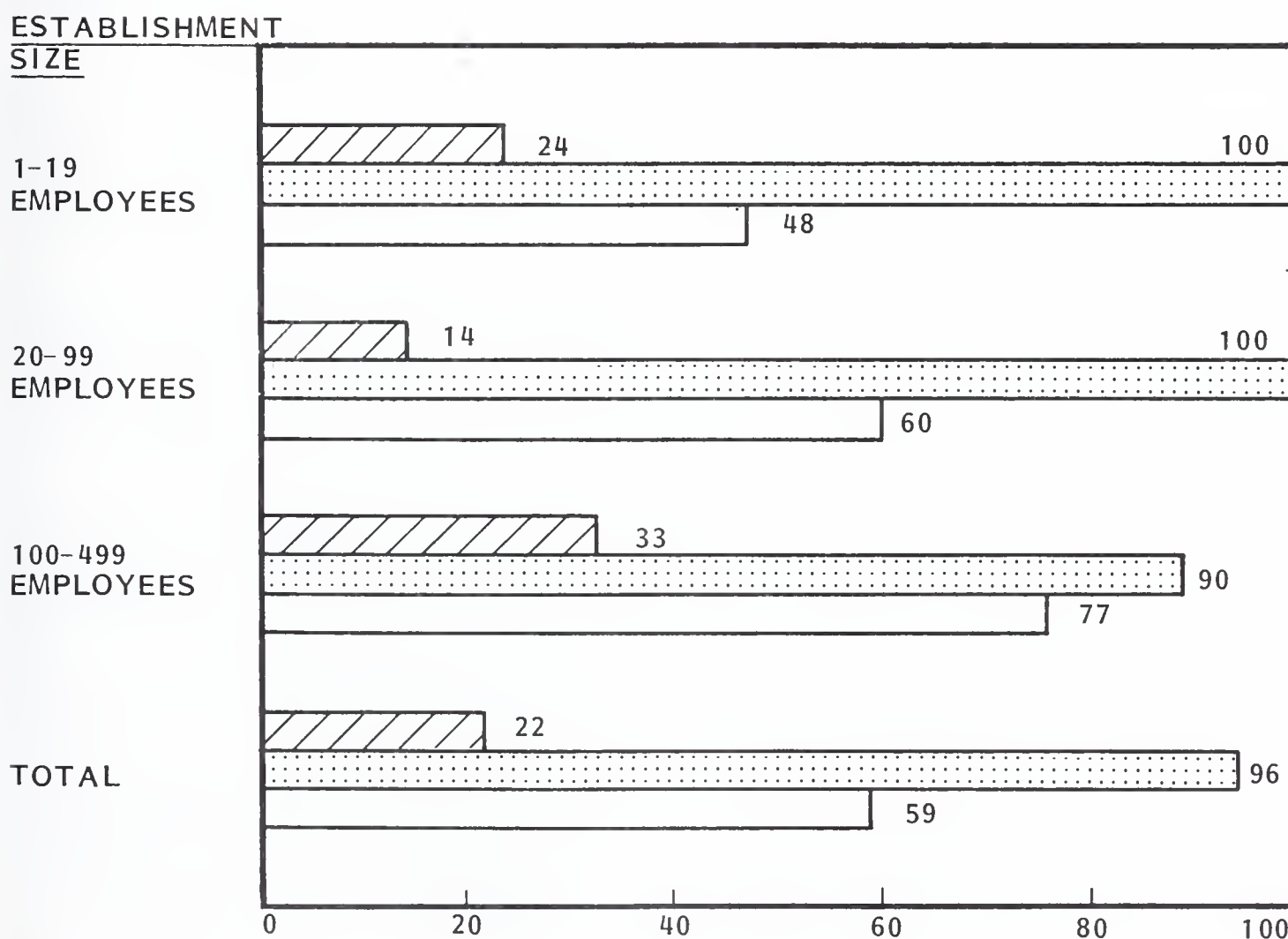
-  BRANCHES (N = 27)
-  INDEPENDENTS (N = 27)
-  COMBINED (N = 54)

EXHIBIT VII-11

IS THE DECISION TO PURCHASE COMMUNICATIONS SERVICES MADE HERE?



PERCENTAGE OF RESPONDENTS WHO STATE PURCHASE
DECISIONS WERE MADE AT THEIR LOCATION




-  BRANCHES (N = 27)
-  INDEPENDENTS (N = 27)
-  COMBINED (N = 54)

EXHIBIT VII-12

IS THIS LOCATION INVOLVED IN THE
DECISION TO OBTAIN SUPPLIES?

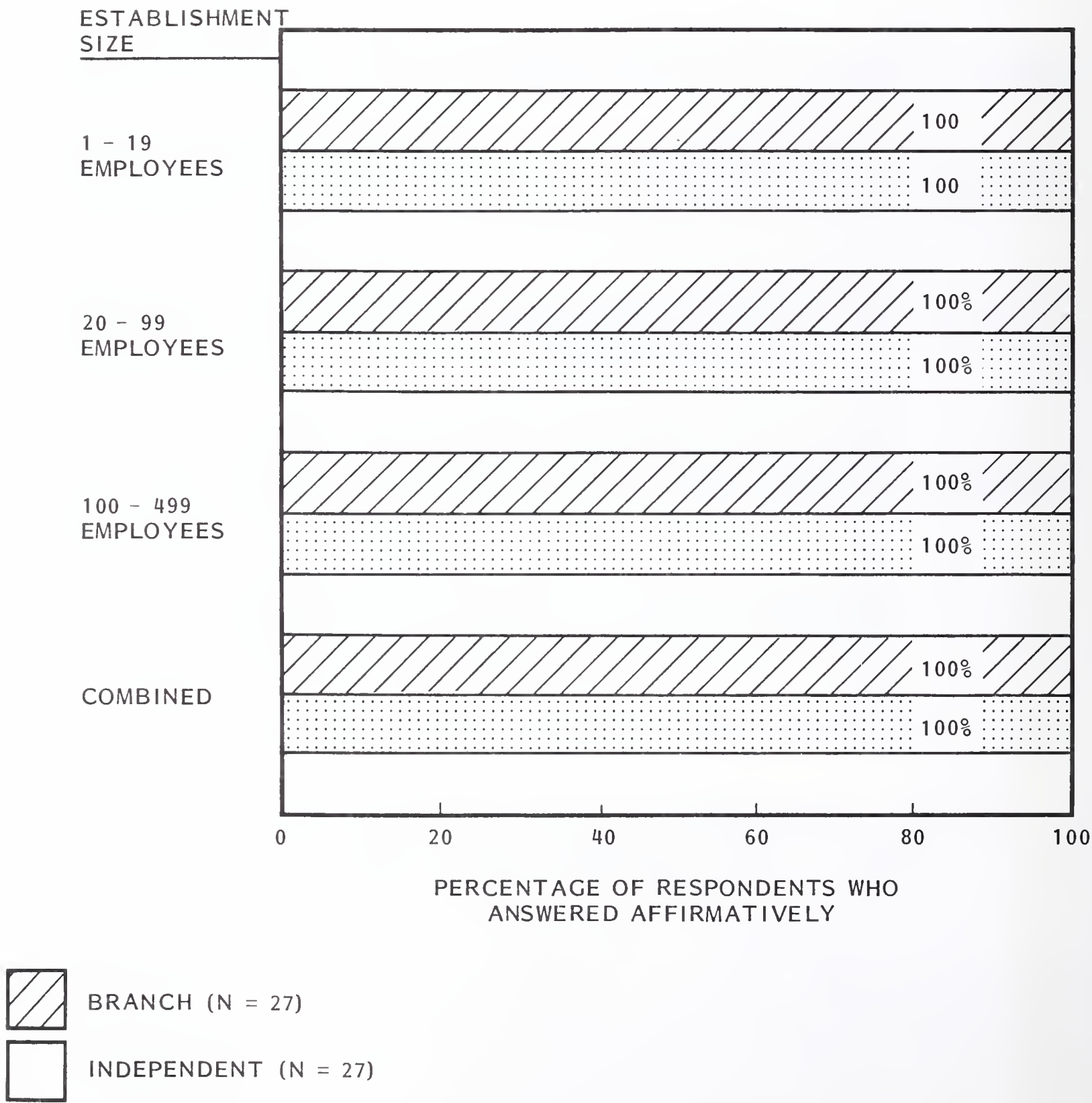
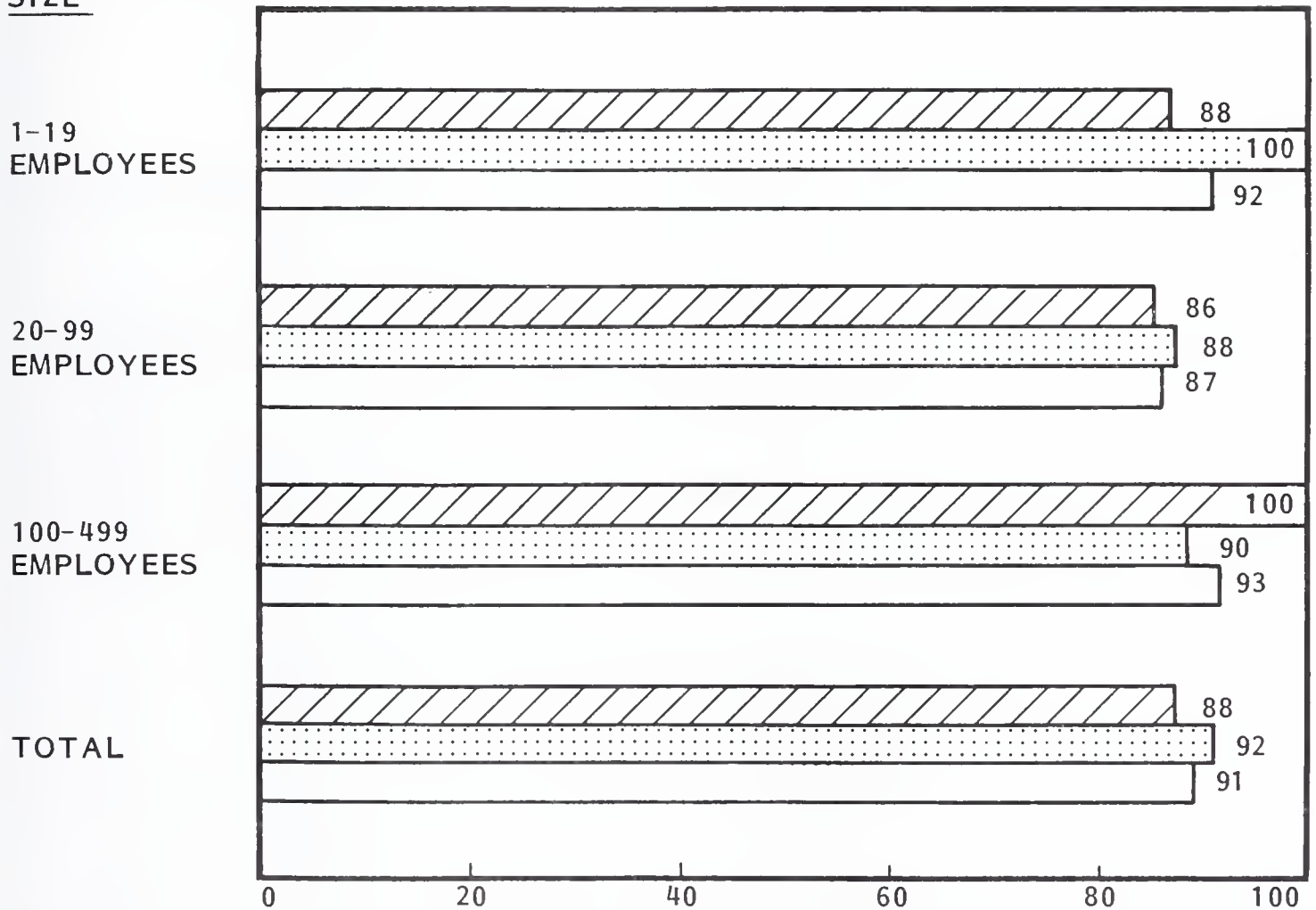





EXHIBIT VII-13

IS THE DECISION TO PURCHASE SUPPLIES MADE HERE?

ESTABLISHMENT SIZE



PERCENTAGE OF RESPONDENTS WHO STATED PURCHASE
DECISIONS WERE MADE AT THEIR LOCATION

-  BRANCHES (N = 27)
-  INDEPENDENTS (N = 27)
-  COMBINED (N = 54)

all sizes of independents made purchase decisions regarding consumable supplies at their locations.

- Branches become more involved in purchase decisions as the size of the branch establishment increases, as illustrated in Exhibit VII-14.
 - From respondent comments, small branches are limited to expressing needs or occasionally making recommendations.
 - Larger branches also may recommend brands, or even decline recommendations made by corporate headquarters.
- The decision process in independent establishments becomes more formalized as the size of the establishments increases (see Exhibit VII-15).
 - There are also indications of increasing decentralization of decision-making among the larger establishments.
 - However, all types of decision techniques are used, including the use of survey and review committees.

EXHIBIT VII-14

THE ROLE OF BRANCHES IN PURCHASE DECISIONS

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "We only express needs or make recommendations."
- "We make needs known."
- "I make needs known to headquarters but even that's not always worth the trouble because headquarters does what it wants."
- "Working in a complex heirarchy is at times binding but head-quarters gives good advice and I do have some latitude to express needs."
- "I make highly specialized requests which are reviewed by headquarters. Brand and model decisions are made at head-quarters but I can send equipment back if it's not satisfactory."
- "At the branch level, the managers are not exposed to the availability of equipment the way that specialized people at headquarters are...only needs are expressed at the branch level. Actual specific decisions are made at headquarters."
- "Any asset over \$100 must be requisitioned from the purchasing department."
- "Corporate has never turned down an equipment request."
- "We suggest brands to corporate."
- "Requisition must go through purchasing if for more than fifty dollars."
- "Corporate will make recommendations which sometimes stick."
- "We usually follow corporate recommendations."

EXHIBIT VII-15

PURCHASE DECISIONS IN INDEPENDENT ESTABLISHMENTS - COMMENTS FROM RESPONDENTS

INCREASING SIZE
OF RESPONDENT
ESTABLISHMENT



- "Cashier and president would decide."
- "When you have six people in a bank, everyone is top management."
- "Computer expenditures are usually decided by our holding company who provides computer services."
- "Everything comes through this office."
- "We request a type of equipment and get approval with a dollar ceiling. We then purchase locally. Now that there is a central computer, the decision process will change and we will be told what to buy by headquarters."
- "Major purchases require approval of the board of directors."
- "A special survey committee investigates new equipment prior to any decisions."
- "The decision process depends on the dollar amount. Small expenses are decided by junior officers. For larger expenses, a general committee (composed of top management) would review a presentation by three or four vendors before a decision is made."
- "It is a bank policy that equipment is purchased by people who will use it."

APPENDIX A: SOURCES USED

APPENDIX A: SOURCES USED

- County Business Patterns - U.S. Summary
- U.S. Department of the Census -
1975, Exhibits 1B, 2B
- County Business Patterns - U.S. Summary
- U.S. Department of the Census -
1972, Exhibits 1B, 2B
- 1977 Statistical Abstract of the United States
- 1976 Statistics of Communications
Common Carriers - Federal Communications
- 1976 Bank Operating Statistics - Federal Deposit Insurance Corporation
- 1977 Standard Industrial Code Manual
- 1978 Polk's World Bank Directory -
R. L. Polk and Company
- 1978 Electronic Market Data Book -
Electronic Industries Association
- Fortune Magazine - July 17, 1978

- 1977 Computer Services Industry Annual Report
Market Analysis Service
- Computer Services Markets in Correspondent Banking -
Market Analysis Service - INPUT
- Computing Services Markets In The Savings And Loan Industry -
Market Analysis Service - INPUT
- Financial Statements of Various Automated Equipment Manufacturers

APPENDIX B: INTERVIEW PROGRAM FOR BANKING

APPENDIX B

INTERVIEW PROGRAM FOR THE BANKING INDUSTRY

ESTABLISHMENT SIZE	INDEPENDENT FIRMS			"FORTUNE 50" BRANCHES			TOTAL
	ON SITE PHONE HYBRID*			ON SITE PHONE HYBRID*			
1-19 EMPLOYEES	0	8	0	0	16	1	25
20-99 EMPLOYEES	1	6	1	0	7	0	15
100+ EMPLOYEES	0	10	1	0	1	2	14
TOTAL	27			27			54

*COMBINATION OF PHONE/MAIL INTERVIEW

APPENDIX C: DEFINITIONS

APPENDIX C: DEFINITIONS

- An enterprise is a business organization.
- An establishment is a physical location, or a street address and can be:
 - An independent enterprise.
 - A branch of a major enterprise.
- An establishment can be a single-unit enterprise (SUE) or part of a multi-unit enterprise (MUE).
 - A single unit enterprise is an establishment having all operations consisting of activities not distinctly separable.
 - A multi-unit enterprise is a business organization consisting of more than one establishment or an establishment having distinctly separable activities.
- A branch is a physical location or street address and part of a "Big Eight" accounting firm or other national accounting firm.

- An independent establishment is a SUE or MUE whose employment is 500 employees or less and not a branch as defined above.
- Computer services are provided by vendors which perform data processing functions using vendor computers, or who assist users to perform such functions on their own computers; included are remote computing services (RCS), batch services, facilities management, professional services, and software products.
- Computer equipment includes any locally installed terminal, minicomputer, or mainframe. For the purpose of forecasting only, the term is defined as a locally installed general purpose minicomputer or mainframe; i.e., local processing intelligence -- not including desk top calculators or accounting machines.
- Communications equipment includes keysets of PABX. Communications automation is defined as interconnect, which is the attachment and use of non-telephone company equipment together with telephone company equipment or services.
- Communications services includes direct dial long distance (DDD), WATS, leased lines, Telex/TWX, or other regulated transmission of voice or data.
- Office automation is defined as the use of word processing/text editing equipment, either single station or multi-station.
- Office equipment includes word processing, photocopiers, duplication machines and facsimile equipment.
- Industry specific EDP applications are defined as EDP applications which are important automatable functions of an industry or group industries; e.g., interline payables (transportation) and bill of materials (discrete manufacturing).

APPENDIX D: QUESTIONNAIRE

CONFIDENTIAL SMALL ESTABLISHMENT SURVEY

We have been retained by a group of clients in the office products, computer, and communications industries to determine how they can better serve the needs of small and medium sized locations in your line of business. We are especially interested in the factors that influence how you obtain goods and services. All information will be kept strictly confidential and used for statistical purposes only.

SECTION I - GENERAL INFORMATION ABOUT YOUR COMPANY

- 1a. Is this location: headquarters of an independent enterprise ()
part of a larger company ()
- 1b. How many other locations are there? _____
2. What is the PRIMARY line of business at this location?
- | | |
|--|-----------------------------|
| <u>Description of Product or Service</u> | <u>Regional or National</u> |
|--|-----------------------------|
3. What is the SECONDARY line of business at this location (if any)?
- | | |
|--|-----------------------------|
| <u>Description of Product of Service</u> | <u>Regional or National</u> |
|--|-----------------------------|
4. What functions are performed here? ()Sales ()Accounting ()R & D
()Warehousing ()Manufacturing ()Other _____
5. What are the annual gross sales at this location (if applicable) \$ _____
per yr.
6. How many employees at this location?
- | | | |
|------------------|--------------|------------------|
| _____ production | _____ office | _____ management |
|------------------|--------------|------------------|

SECTION II - IMPROVEMENT PLANS

1. What are the most significant administrative or information-related problems in your organization that you would like to see resolved?
- _____
2. Would a piece of office equipment that can accommodate several administrative functions be more attractive to you than single-function equipment? ()Yes ()No ()Depends on application. Which administrative functions would it have to handle? _____
3. What do you consider your primary data processing needs? _____

4. What are the most important improvements that are needed in the telephone/communications area? _____

5. What is currently preventing you from automating more of your office operations? _____

6. In order of priority, what improvements do you expect to make in any of these areas in the next two years? _____

7. In the next 3-5 years? _____
7. Would you consider (or have you considered) using an outside service for any of these improvements?
() Yes. Which functions? _____
() No. Why? _____
8. How can office, communications, data processing equipment manufacturers better meet your needs? _____

SECTION III - OFFICE AND COMMUNICATION REQUIREMENTS

1. Please check all of the following that apply to your location.

<u>Office Function</u>	<u>Doing Now</u>	<u>Will Do Within 5 Yrs.</u>
Copying	()	()
Duplication/Printing (using ink)	()	()
Text/Word Processing (automatic equipment)	()	()
Photocomposition	()	()
Other _____	()	()

2. If you are doing or planning to do any of the following over phone lines, please check all that apply.

<u>Communication Function</u>	<u>Using Now</u>		<u>Will Be Using In 5 Yrs.</u>	
	<u>Inside Parent Organization</u>	<u>To Other Companies</u>	<u>Inside Parent Organization</u>	<u>To Other Companies</u>
WATS or private lines	()	()	()	()
Telex/TWX	()	()	()	()
Sending data by phone to or from computers	()	()	()	()
Text editing by phone to or from another location	()	()	()	()
Facsimile transmission	()	()	()	()
Other _____	()	()	()	()

3. What major changes do you foresee for your company in either of these areas? _____

4. What other problems do you have in these areas that you would like to see resolved? _____

SECTION IV - EDP FUNCTIONAL REQUIREMENTS

1. If you are presently performing the following functions by hand at your location, or if you are using a computer, terminal, or outside computer services firm, or if you expect to automate any of these functions within 5 years, please check all that apply. Otherwise, check this box () and skip to the next section.

	DONE BY HAND NOW	AUTOMATED WITHIN			DONE BY HAND NOW	AUTOMATED WITHIN	
		NOW	5 YEARS			NOW	5 YEARS
<u>Marketing & Sales</u>				<u>Purchasing</u>			
Order Entry	()	()	()	Inventory Control	()	()	()
Sales Analysis	()	()	()	Receiving	()	()	()
Credit Authorization	()	()	()	Other _____	()	()	()
Other _____	()	()	()	<u>Manufacturing</u>			
<u>Finance-Accounting</u>				Bill of Materials			
Payroll	()	()	()	Shop Floor Control	()	()	()
Billing	()	()	()	Order Tracking	()	()	()
Accts. Receivable	()	()	()	Material Require-			
Accts. Payable	()	()	()	ments Planning	()	()	()
General Ledger	()	()	()	Scheduling	()	()	()
Other _____	()	()	()	Job Costing	()	()	()
<u>Warehousing-Distribution</u>				Estimating			
Order Allocation	()	()	()	Numerical Control	()	()	()
Shipping	()	()	()	Other _____	()	()	()
Stock Replenishment	()	()	()	<u>R & D</u>			
Other _____	()	()	()	Analysis/Design	()	()	()
				Other _____	()	()	()

2. What major changes in EDP do you foresee for your company in the next 5 years? _____
3. What other EDP problems do you have that you would like to see resolved? _____

SECTION V - DECISION PROCESS

1. How do you usually go about finding a solution to any of these problems? Please mark 1st, 2nd, and 3rd choice.

	1st ()	2nd ()	3rd ()
Look at trade journals	()	()	()
Look at catalogues	()	()	()
Look in the Yellow Pages	()	()	()
Talk to other companies/divisions	()	()	()
Salesmen call on you	()	()	()
Send for literature	()	()	()
Attend a trade show by your industry	()	()	()
Demonstration or show by their company	()	()	()
Other _____	()	()	()

2. Which journals and publications are most useful to you? _____

3. Which trade shows are most useful to you? _____

4. Who is involved in the decision to obtain equipment or services?
(please check all that apply)

	AT THIS LOCATION			AT CORP. HDQTRS.		
	Top Mgmt.	Dept. Head, Line Mgr.	Ofc. Mgr., EDP Mgr.	V-P or above	Purch. Dept.	Tech. Staff
EDP Equipment	()	()	()	()	()	()
EDP Services	()	()	()	()	()	()
Office Equipment	()	()	()	()	()	()
Office Services	()	()	()	()	()	()
Communications Eqpt.	()	()	()	()	()	()
Communications Svcs.	()	()	()	()	()	()
Supplies	()	()	()	()	()	()

5. Does the final decision require: () committee approval
() trial installation
() financial/payback analysis
() special conditions: _____

IF YOU ARE AN INDEPENDENT ENTERPRISE SKIP TO SECTION VI

6. Describe any significant differences in decision techniques depending on product/services listed in question 4.

7. How does corporate get involved? (Please check all that apply)
() Initiate () Advise () Approve () Dictate () Set Standards

8. If corporate involvement varies, does it depend upon:
() \$ Amount () Type of device/service () Application
() Other (specify) _____

SECTION VI - WHAT IS PRESENTLY IN USE AT YOUR LOCATION?

A - Equipment

	Company Make/Model	Number In Use	Approx. Cost
1. Computer Related			
a. Accounting Machine	_____	_____	_____
b. Desk Top Calculator	_____	_____	_____
c. Terminal	_____	_____	_____
d. Small business Computer	_____	_____	_____
If d, is it connected to headquarters? ()Yes ()No			
2. Copiers	Company Make/Model	Number In Use	No. Copies/Month
a. Coated Paper Copier	_____	_____	_____
b. Plain Paper Copier	_____	_____	_____
c. Duplicator (ink process, uses a master)	_____	_____	_____
3. Text Editing/Word Processing	Company Make/Model	Number In Use	No. Pages/Month
a. Single station	_____	_____	_____
b. Multi-station	_____	_____	_____
c. Other _____	_____	_____	_____
4. Communications Related	Company Make/Model	Number In Use	No. Trunks
a. Keyset	_____	_____	_____
b. PABX	_____	_____	_____
c. Facsimile	_____	_____	_____
d. Other _____	_____	_____	_____

B - Outside Services

5. EDP Services	Service Type	% Of Total EDP Function Performed By Services	
	_____	_____	
	_____	_____	
6. Office Services	Service Type	% Of Total Office Function Performed By Services	
a. Text Processing	_____	_____	
b. Composition	_____	_____	
7. Communications Services	Service Type	% To Your Co.	% To Other Companies
a. From phone company	_____	_____%	_____%
b. From independent supplier of services not equipment mfg. (ie. Western Union, MCI)	_____	_____%	_____%

SECTION VII - SIZE OF STAFF

1. How many full-time equivalent employees do you have at your location in these classifications?

	Now	Changes expected in next 5 years
<u>EDP RELATED</u>		
a. Data Entry (only)	_____	_____
b. Operators (only)	_____	_____
c. Programmers	_____	_____
d. Analysts	_____	_____
<u>OFFICE RELATED</u>		
e. Secretaries/Typists	_____	_____
f. Clerks	_____	_____
g. Other_____	_____	_____
<u>COMMUNICATIONS RELATED</u>		
h. Switchboard Operators	_____	_____
i. Technicians/Professionals	_____	_____
2. Total Employees this location	_____	_____

SECTION VIII - EXPENDITURES

1. How do you normally budget for administrative expenses?
- _____percentage of gross sales ()
 - last year's personnel and consumable costs plus allowance for inflation ()
 - treat new office equipment as capital investment and handle on individual basis ()
 - no separate location budget; included in corporate budget ()
 - other (describe)_____ ()
2. How large an expense could you consider for improvements in any one year, assuming benefits justify the expenditure?
- | | |
|-----------------------------|------------------------------|
| Less than \$100/monthly () | \$1001 - \$2000/monthly () |
| \$100 - \$250/monthly () | \$2001 - \$3500/monthly () |
| \$251 - \$500/monthly () | \$3500 - \$5000/monthly () |
| \$501 - \$1000/monthly () | More than \$5000/monthly () |
3. Do you have a separate budget for communications?_____ If so, how much is it? \$_____/year. How is it determined?
- _____
4. Do you have a separate budget for data processing?_____ If so, how much is it? \$_____/year. How is it determined?

5. Do you have a separate budget for office equipment? ____ If so,
how much is it? \$_____/year. How is it determined?

6. Do you have a separate budget for office supplies? ____ if so,
how much is it? \$_____/year. How is it determined?

ALL INFORMATION IN THIS QUESTIONNAIRE WILL BE KEPT STRICTLY CONFIDENTIAL AND USED FOR
STATISTICAL PURPOSES ONLY.

